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FINDING THE BALANCE

**Transformations of Knowledge and Valuations
in Biodiversity Offset Policies in Colombia**

Doctoral dissertation by

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ABSTRACT

While 'awareness' calls for a greater consideration of biodiversity and a transformation of practices, the question arises for all actors, albeit in very different ways, as to what is this biodiversity that should be protected and how to act appropriately. This thesis examines the links between transformations of knowledge about biodiversity and the valuation of its meaningful properties, by drawing on the study of biodiversity offsets. The observation of the IPBES work during a plenary in 2018 allows first the analysis of the negotiations and perceived implications of global biodiversity knowledge. Then, the transformations caused by biodiversity offsets are studied by focusing on their emergence at a global level and then by taking as a case study the implementation of these policies in Colombia. For this purpose, a ten-month fieldwork has been carried out in the country in 2018-2019, including several months of ethnography within its national environmental authority — the ANLA, in charge of the licensing of projects. Instead of analysing whether offsets can actually fulfil their promises, which consist in compatibilizing conservation and development, this research articulates moral sociology with French pragmatic sociology to take a step back by looking at the multiplicity of contradictory effects that the development of this policy produces, and the struggles of actors to make sense of it and determine a coherent way to orient their inquiries and actions. Through its multi-sited character, this research shows not only the multiple reconfigurations of the notion of biodiversity and its components caused by global assessments, biodiversity offsets and impact evaluations, but also the actualization of environmental ethics in practices through valuations, and their inseparability from a web of valuations of knowledges, institutions, politics, procedures and actors. This work also contributes to understanding scales and scale-making as sites of contestation by showing their key role in the valuation of impacts and more largely in defining and articulating problems and solutions with regard to the biodiversity crisis. This thesis finally demonstrates how, while offsets are considered scientific or technical and based on stabilized conventions, actors constantly questioned the place and space that the 'political', that is the possibility of overcoming the hegemonic language of evaluation, may, should, or take in the processes in which facts and valuations are woven.

RÉSUMÉ

Si la "prise de conscience" appelle à une meilleure prise en compte de la biodiversité et à une transformation des pratiques, la question se pose pour tous les acteurs, bien que de manières très différentes, de savoir quelle est cette biodiversité à protéger et comment agir de manière appropriée. Cette thèse examine les liens entre les transformations des connaissances sur la biodiversité et la valuation de ses propriétés signifiantes, en s'appuyant sur l'étude des compensations pour pertes de biodiversité. L'observation des travaux de l'IPBES lors d'une plénière en 2018 permet d'abord d'analyser les négociations et les implications perçues des connaissances sur la biodiversité mondiale. Ensuite, les transformations provoquées par les compensations sont étudiées en se focalisant sur leur émergence au niveau mondial, puis en prenant comme cas d'étude la mise en œuvre de ces politiques en Colombie. Dans ce but, un travail de terrain de dix mois a été réalisé dans le pays en 2018-2019, dont plusieurs mois d'ethnographie au sein de son autorité environnementale nationale - l'ANLA, en charge de l'autorisation des projets. Au lieu d'analyser si les compensations peuvent effectivement tenir leurs promesses, qui consistent à compatibiliser conservation et développement, cette recherche articule sociologie morale et sociologie pragmatique française pour prendre du recul en s'intéressant à la multiplicité des effets contradictoires que produit le développement de cette politique, et aux luttes des acteurs pour lui donner du sens et déterminer une manière cohérente d'orienter leurs enquêtes et leurs actions. Par son caractère multisitué, cette thèse montre non seulement les multiples reconfigurations de la notion de biodiversité et de ses composantes provoquées par les évaluations globales, les compensations de biodiversité et les évaluations d'impact, mais aussi l'actualisation de l'éthique environnementale dans les pratiques à travers les valuations, et leur inséparabilité d'un réseau de valuations des savoirs, des institutions, des politiques, des procédures et des acteurs. Ce travail contribue également à la compréhension des échelles et leur élaboration comme lieux de contestation, en montrant leur rôle clé dans l'évaluation des impacts et plus largement dans la définition et l'articulation des problèmes et des solutions concernant la crise de la biodiversité. Cette thèse montre finalement comment, alors que les compensations sont considérées comme scientifiques ou techniques et fondées sur des conventions stabilisées, les acteurs remettent constamment en question la place et l'espace que le "politique", c'est-à-dire la possibilité de dépasser le langage hégémonique de l'évaluation, peut, devrait ou prend dans les processus dans lesquels faits et valuations s'entremêlent.

RESUMEN

Si bien la "concienciación" exige una mayor consideración de la biodiversidad y una transformación de las prácticas, todos los actores se preguntan, aunque de forma muy diferente, qué es esa biodiversidad que hay que proteger y cómo actuar adecuadamente. Esta tesis examina los vínculos entre las transformaciones del conocimiento sobre la biodiversidad y la valuación de sus propiedades significativas, basándose en el estudio de las compensaciones por pérdida de biodiversidad. La observación de los trabajos de la IPBES durante una sesión plenaria en 2018 permite, primeramente, analizar las negociaciones y las implicaciones percibidas del conocimiento de la biodiversidad mundial. A continuación, se estudian las transformaciones provocadas por las compensaciones, centrándose en su surgimiento a nivel mundial y luego tomando como caso de estudio la implementación de estas políticas en Colombia. Para este propósito, se ha realizado un trabajo de campo de diez meses en el país en 2018-2019, incluyendo varios meses de etnografía dentro de su autoridad ambiental nacional — la ANLA, encargada del licenciamiento de proyectos. En lugar de analizar si las compensaciones pueden realmente cumplir sus promesas, que consisten en compatibilizar la conservación y el desarrollo, esta investigación articula la sociología moral con la sociología pragmática francesa para dar un paso atrás observando la multiplicidad de efectos contradictorios que produce el desarrollo de esta política, y las luchas de los actores para darle sentido y determinar una forma coherente de orientar sus indagaciones y acciones. A través de su carácter multisituado, esta investigación evidencia no sólo las múltiples reconfiguraciones de la noción de biodiversidad y sus componentes provocadas por las evaluaciones globales, las compensaciones y las evaluaciones de impacto, sino también la actualización de la ética ambiental en las prácticas a través de las valuaciones, y su inseparabilidad de un entramado de valuaciones de saberes, instituciones, políticas, procedimientos y actores. Este trabajo también contribuye a la comprensión de las escalas y su elaboración como lugares de impugnación, mostrando su papel clave en las valuaciones de impactos y, en mayor medida, en la definición y articulación de los problemas y las soluciones con respecto a la crisis de la biodiversidad. Por último, esta tesis demuestra cómo, mientras las compensaciones se consideran científicas o técnicas y se basan en convenciones estabilizadas, los actores cuestionan constantemente el lugar y el espacio que lo "político", es decir la posibilidad de superar el lenguaje hegemónico de la evaluación, puede, debe o toma en los procesos en los que se tejen hechos y valuaciones.

RIASSUNTO

Se la "consapevolezza" richiede una migliore considerazione della biodiversità e una trasformazione delle pratiche, si pone per tutti gli attori, anche se in modi molto diversi, la questione di sapere quale biodiversità proteggere e come agire in modo appropriato. Questa tesi esamina i legami tra le trasformazioni nella conoscenza della biodiversità e la valutazione delle sue proprietà significative, basandosi sullo studio della compensazione delle perdite di biodiversità. Osservando il lavoro dell'IPBES durante una sessione plenaria nel 2018, analizziamo prima i negoziati e le implicazioni percepite della conoscenza della biodiversità globale. Poi, le trasformazioni causate dalle compensazioni sono studiate concentrandosi sul loro emergere a livello globale, prendendo poi come caso di studio l'attuazione di queste politiche in Colombia. A tal fine, dieci mesi di lavoro sul campo sono stati condotti nel paese nel 2018-2019, compresi diversi mesi di etnografia all'interno della sua autorità ambientale nazionale — ANLA, incaricata di autorizzare i progetti. Invece di analizzare se le compensazioni possono effettivamente mantenere la loro promessa di rendere compatibili conservazione e sviluppo, questa ricerca articola la sociologia morale francese e la sociologia pragmatica per fare un passo indietro e guardare alla molteplicità di effetti contraddittori che lo sviluppo di questa politica produce, e alle lotte degli attori per darle un senso e determinare un modo coerente di orientare le loro indagini e azioni. Attraverso il suo carattere multisituato, questa tesi mostra non solo le riconfigurazioni multiple della nozione di biodiversità e delle sue componenti causate da valutazioni globali, compensazioni di biodiversità e valutazioni di impatto, ma anche l'attualizzazione dell'etica ambientale nelle pratiche attraverso le valutazioni, e la loro inseparabilità da una rete di valutazioni di conoscenze, istituzioni, politiche, procedure e attori. Questo lavoro contribuisce anche alla comprensione delle scale e della loro elaborazione come luoghi di contestazione, mostrando il loro ruolo chiave nella valutazione dell'impatto e più in generale nella definizione e articolazione dei problemi e delle soluzioni riguardanti la crisi della biodiversità. Questa tesi mostra infine come, mentre le compensazioni sono considerate scientifiche o tecniche e basate su convenzioni stabilizzate, gli attori si interrogano costantemente sul posto e lo spazio che il "politico", cioè la possibilità di andare oltre il linguaggio egemonico della valutazione, può, deve o prende nei processi in cui si intrecciano fatti e valutazioni.

ON THE EXACTITUDE OF THIS RESEARCH

The description of my island has cost me six months of constant composition, and each day it has grown more misty. I have consulted public libraries, and I have exhausted private collections. I have authorities for every circumstance, and every creature; my geography is most chorographically correct, my botany most generically minute, my mineralogy indisputable, my geology undisputed; not less profound, and not less accurate, are my zoology, my ornithology, and my ichthyology. Yet, with all my longitudes, and latitudes; all my shrubs, and trees, and flowers, and forests; all my precious stones, and all my primitive formations; all my beasts, and all my birds, and all my fishes; my Indian Isle is about as intelligible as a man who has accepted office without his party.

The Voyage of Captain Popanilla, Benjamin Disraeli, 1828.

Already having myself from the beginning a very well-packed set of research questions that fell on me while riding my bicycle, and which lead me to discover the true answers I was looking for, this thesis has been written exactly as it was planned to be and following the order that was its destiny. My reflection does not own anything to the investigative process, which merely allowed me to fill in the blanks left for evidences proving my timeless accurate hypothesis.

Determined to find the elements that would fit as perfectly as possible my confirmation bias, I've never renounced in eliminating incongruous bad data and stayed focus toward the one and only possibility: confirming what I already knew, which was not that difficult in the end since the actors, unlike me, are usually wrong. Sadly, I've indeed been able to observe how most of them were kept subjugated by their credulous ideologies.

I've myself avoided at all cost any type of reflexivity or political considerations which would have threatened the purity of my objective work, and the insights taken from the people I met just confirmed what had been already well known, but unfortunately never been written before. I can therefore be proud of my participation to the progress of science, which universality and eternity allow researchers to get closer to scaleless omniscience.

I can only regret that most public affairs are not handled as it should in a more professional manner by experts who at least know what they're talking about and could help illuminate the people with their holy knowledge. This would avoid shameful debates orchestrated by advocates of the plurality of the points of view and relativists of all sorts. As scientists we know all too well that the reality is a scientific construction, which is why common people cannot have any access to it through their experience.

Let this work dissipate any misunderstanding and uncertainty, and allow the truth to shine from above. Or not.

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*To Valeria Solesin,
and those enabling dialogues in the respect of complexity and diversity*

LIST OF ACRONYMS

ANDI	Asociación Nacional de Empresarios de Colombia – National Association of Colombian Businessmen
ANLA	Autoridad Nacional de Licencias Ambientales – National Authority of Environmental Licences
BBOP	Business and Biodiversity Offsets Programme
BIOFIN	Biodiversity Finance Initiative
CAR	Corporación Autónoma Regional – Regional Autonomous Corporation
CBD	Convention on Biological Diversity
CI	Conservation International
CIFOR	Center for International Forestry Research
CLA	Coordinating Lead Author
DRMI	Distrito Regional de Manejo Integrado – Integrated Management Regional District
EIA	Estudio de Impacto Ambiental– Environmental Impact Assessment
ENB	Environmental News Bulletin
EU	European Union
FoTC	Friends of The Chair
GA	Global Assessment
GBO	Global Biodiversity Outlook
GDB	Geographical DataBase or geodatabase
GIZ	Gesellschaft für Internationale Zusammenarbeit
GPS	Global Positioning System
IDEAM	Instituto de Hidrología, Meteorología y Estudios Ambientales – Institute of Hydrology, Meteorology and Environmental Studies
IFC	World Bank’s International Finance Corporation
IIFB / IIFBES	International Indigenous Forum on Biodiversity (and Ecosystem Services)
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
IPCC	Intergovernmental Panel on Climate Change
IPLCs	Indigenous People and Local Communities
IUCN	International Union for Conservation of Nature
MADS	Ministerio de Ambiente y Desarrollo Sostenible – Ministry of Environment and Sustainable Development
NGO	Non-Governmental Organization
NNL	No Net Loss
OECD	Organisation for Economic Co-operation and Development

List of acronyms

PNGIBSE	Política para la Gestión Integral de la Biodiversidad y sus Servicios Ecosistémicos – National Policy for the Integral Management of Biodiversity and Its Ecosystemic Services
SDGs	Sustainable Development Goals
SEMCA	Sistema de Evaluación y Monitoreo a la efectividad de las Compensaciones Ambientales en Colombia – System of Evaluation and Monitoring of the effectivity of Offsets in Colombia
SPM	Summary for Policy Makers
TEEB	The Economics of Ecosystems and Biodiversity
TNC	The Nature Conservancy
UK	United Kingdom
UN	United Nations
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
USA	United States of America
WCS	Wildlife Conservation Society
WG8(j)	Ad hoc open-ended inter-sessional Working Group on Article 8(j) and related provisions of the Convention on Biological Diversity
WWF	World Wildlife Fund

TABLE OF CONTENTS

Introduction	18
i) From personal interrogations to theoretical encounters	19
ii) The unstable edges of the political	21
iii) Living in this world as moral beings (and sociologists)	24
iv) Premises for the study of the relation between biodiversity and ethics	26
v) Structure of the dissertation	28
vi) Methodology.....	35
a) Fieldwork activities.....	37
b) Interviews.....	41
c) Softwares used for the analysis.....	43
d) Note on the vocabulary and the text.....	45
CHAPTER 1: Biodiversity between knowledge and ethics	47
1.1 Introduction	47
1.2 Social history of an ambiguous natural concept	47
1.2.1 A fuzzy concept.....	48
1.2.2 ... whose scientificity remains unreachable	49
1.2.3 Biodiversity as a concerning tool.....	52
1.2.4 The institutionalisation of biodiversity.....	55
1.2.5 Biodiversity in tension between ecology and economics	56
1.2.6 Biodiversity as an object of controversy on the nature of knowledge	57
1.2.7 From the concept of biodiversity to the human preoccupations toward it	58
1.3 Ethics and biodiversity: from conjured performativity to knowledge implications.....	59
1.3.1 How to situate the humans in biodiversity?	59
1.3.2 Why care about biodiversity?	60
1.3.3 Frameworks of Human-Nature relations and ethical implications	63
1.3.4 From biodiversity values to valuations	69
1.3.5 Some relations between knowledge and ethics	75
1.3.6 Depictions of the world and environmental ethics.....	83
1.3.7 Evolving, processual and contested coherencies.....	87
1.3.8 Ethical and valuation conflicts and transformations.....	89
1.3.9 Examples of the relation between knowledge and ethics in the case of species and their functions	91
1.4 Conclusion.....	95
CHAPTER 2: Keeping science, politics and ethics in equivocation: the case of IPBES and the discussions of the Global Assessment.....	97
2.1 Introduction	97
2.2 Ontologies of a science-policy interface.....	98
2.3 Fieldwork during the IPBES 7th plenary	100
2.4 The institutional labour of delivering a scientific summary for policy-makers	104
2.5 Description of discussions	109
2.5.1 Paragraph B6: indigenous lands between tradition, science, law and politics.....	109
2.5.2 Figure 6: a map with uncomfortable details	115
2.5.3 Paragraph D5: rights of Indigenous Peoples between conservation benefits and subjection to national interests and legislations.....	118
2.5.4 Paragraph D8: from troubled scientific causalities to the carriers of causes	133

Table of Contents

2.5.5 Paragraph D10: reforming the “reform” susceptibilities, so to find lexical balance	139
2.6 Strategies and possibilities of modification of the text	141
2.7 From science to action: fine-tuning the effects of an interface	142
2.7.1 The frustrating and frustrated translation of scientific knowledge into “actions”	142
2.7.2 Crafting scientific “messages” for launching an alert, but also for handy copy and paste	143
2.7.3 An alert infrastructure that should be contained in its place	144
2.7.4 Performativity and conditions of success of the alert	146
2.7.5 A non-political “future we want”?	148
2.7.6 The unsprescriptiveness of a moral imperative to act	148
2.8 Conclusion	150
CHAPTER 3: The global rise of biodiversity offsets and its controversies	152
3.1 What are Biodiversity Offsets?	153
3.2 History of environmental compensations	154
3.3 Making the case for biodiversity offsets	155
3.3.1 Aligning business and biodiversity	157
3.3.2 ‘Net gain’ and beyond	160
3.4 Key notions of biodiversity offsetting	161
3.5 Critiques and controversies	163
3.5.1 Structuration of the academic field around biodiversity offsetting	163
3.5.2 Never-ending challenges and promises of futures to come	182
3.5.3 Other actors contesting offsets	182
3.6 Biodiversity offsets are dead, long live biodiversity offsets?	184
3.7 Conclusion	187
CHAPTER 4: Protection of the environment and the emergence of biodiversity offsetting in Colombia.....	189
4.1 Introduction: peace and biodiversity in Colombia	189
4.2 Biodiversity perceptions and legislative transformations	193
4.2.1 Evolution of the focus of the Colombian environmental protection laws.....	193
4.2.2 National biodiversity plans	198
4.2.3 Main institutions	200
4.2.4 Biodiversity entanglements in Colombian press articles	201
4.3 A variety of compensations reflecting diverse modes of valuation.....	204
4.3.1 Environmental licensing	204
4.3.2 The different types of environmental compensations in Colombia	205
4.3.3 Evolution of the compensations.....	210
4.4 Origins of the Colombian biodiversity offset Manual.....	211
4.4.1 Justifications for the development of offsets	212
4.4.2 Process of elaboration of the Manual	218
4.5 Analysis of the Manual and evolution of the determining criteria of biodiversity	224
4.5.1 What are the offsets said to compensate: a problem of definitions?	226
4.5.2 Design of the compensation factor: what matters in ecosystems valuation	228
4.5.3 A 'more-than-natural' ecosystemic equivalency.....	234
4.5.4 Determining where and how compensations should be done	238
4.5.5 Setting the duration of the compensations	240
4.6 The futures of compensations	241
4.6.1 Consultations and workshops organized by the actors	242
4.6.2 Grouped compensations and habitat banking	243
4.7 Difficulties and failures of offsetting in Colombia	245

Table of Contents

4.8 Compensation and no net loss	248
4.8.1 Compensation factor and no net loss	248
4.8.2 Power to the compensation factor?	250
4.8.3 Information, risks and uncertainties	251
4.8.4 No net loss and compensation effectivity indicators	252
4.8.5 Tensions between accuracy and applicability	255
4.9 Conclusion	256
CHAPTER 5: Ethnography of an environmental authority in Colombia	258
5.1 Introduction	258
5.2 Historical background of the ANLA	259
5.3 Environmental Impacts Assessments and licensing in Colombia	260
5.3.1 The ANLA in the 'eye of the hurricane'	261
5.3.2 EIA vs Pachamama?	267
5.4 The institutionalisation of the compensations	270
5.4.1 Compensation plans	270
5.4.2 Process of evaluation of the compensations	271
5.5 Ethnographic fieldwork at the ANLA	273
5.5.1 Intention and access	273
5.5.2 Activities and difficulties	274
5.5.3 Observation of meetings and workshops	277
5.6 Visits of projects	279
5.6.1 Visit 1: Sator coal mine	280
5.6.2 Visit 2: Quimbo hydroelectric dam	283
5.6.3 Visit 3: Nikoil Condor oil wells	286
5.6.4 Visit 4: Motorway between Cartagena and Barranquilla	290
5.7 Conclusion	304
CHAPTER 6: Knowledge circulation and friction within an evaluation dispositif	308
6.1 Introduction	308
6.2 Organization and verification of the information, in the offices and in the field	309
6.2.1 Verification of the vegetation cover	311
6.2.2 A glimpse at the process of evaluation of a compensation plan	314
6.2.3 Articulating the interpretations and valuations of information and procedures during the analysis of compensation plans	322
6.2.4 The information struggle of offsets' design and implementation	326
6.3 Relations between the ANLA and the companies	328
6.3.1 Problems of competence and expertise	329
6.3.2 Communication and understandings between implicit and explicit	330
6.3.3 Shifting the basis of approval	335
6.3.4 Discussing the appropriate articulation of informations and preoccupations	337
6.3.5 Flexibility and inflexibility of the evaluation procedures	343
6.3.6 The good and bad 'students' of the environmental assessments	349
6.3.7 Conclusion	350
6.4 Circulation of concepts and normative work	351
6.4.1 Finding the equivalency.....	353
6.4.2 The troubled scientificity of the 'no net loss of biodiversity'	357
6.4.3 Sorting out indicators	360
6.4.4 Conclusion	366
6.5 Conclusion	368
CHAPTER 7: Valuations of compensations between normativity, morality and subjectivity	370

7.1 Introduction	370
7.2 Perceived advantages and drawbacks of normative regulation	371
7.2.1 Norm as a shared constraint	371
7.2.2 Shifting perspectives and legal implications	372
7.2.3 Saving rigidity	376
7.2.4 Frustrating rigidity: difficulties, absurdities and technicisms	378
7.2.5 Flexibility, blurs and technical justifications	383
7.2.6 The limited extent of the regulatory scope.....	386
7.2.7 Moral economies of normative interpretations	388
7.2.8 Conclusion	395
7.3 Delimiting the territory of sound technical justifications	399
7.4 Regimes of proof and subjectivity	405
7.4.1 Axiomatic	405
7.4.2 Conventionality	409
7.4.3 Phenomenology.....	410
7.4.4 Articulations of the three regimes	412
7.4.5 Moral dilemmas.....	413
7.4.6 Conclusion	414
7.5 Political intrusions	415
7.6 Conclusion	418
<i>CHAPTER 8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations</i>	<i>421</i>
8.1 Introduction	421
8.2 Linking global, regional and local biodiversity	423
8.3 Definitions, properties and ontologies of scales	427
8.4 Areas of influence and the frontiers of impact evaluation	431
8.4.1 Defining ecosystems.....	435
8.4.2 Setting impacts boundaries.....	439
8.5 Making and contesting scales	453
8.6 Ecosystems scales and valuations	456
8.6.1 Valuating ecosystems in 'context'	457
8.6.2 Compensation scales	461
8.6.3 Connectivity.....	463
8.7 Frontiers and scales of the mitigation hierarchy.....	465
8.7.1 Before and around the mitigation hierarchy	466
8.7.2 Cumulativity and dilution of impacts	474
8.8 Visions of the territory from the centre	478
8.9 Conclusion	486
<i>Conclusion: Biodiversity knowledge, ethics and troubled politics</i>	<i>489</i>
<i>References</i>	<i>504</i>
<i>Annexes</i>	<i>520</i>
A) Interview guide	520
B) Documents produced for the ANLA	524
a) Letter for gaining access.....	524
b) Work plan	526
c) Final report	531
d) Ronda sostenible.....	532

Introduction

Biodiversity is in danger and it has now become urgent to act. The humanity cannot keep ignoring the reality and has to finally take its responsibility toward the other beings. We, humans, have to become conscious again of who we really are and will reconnect with nature. We are now at a crossroads that will determine the life of future generations.

This is how I could have started my thesis but, despite all the scenarios of degradation, extinction or collapse, the actors on the ground are well aware of the diversity of situations that these words seem to cover uniformly, and are constantly confronting fatality by reopening possible futures, experimenting and recreating certain hopes, envisioning certain directions and paths that could lead in other directions.

"It will soon be too late" is a phrase that was considered during the seminars of my laboratory in Paris as a paradigmatic example of an intertwinement of temporalities and of its implications for the present. This expression contains three interrelated elements: a definition of a present state, and a projected future yet to become, if the course of things stays in the current evaluated trajectory, and a moral judgement of the undesirability of the future for the person or the group of people for whom it will be too late, but not yet, and therefore the still open future over which they still can have a grasp. It portrays a future which can still become either a certainty or only a counterfactual scenario (that is a future "if we hadn't done what had to be done"). The idea was to exemplify the argumentative articulation of the expression of possible future events with its wished performative impacts in the present. It is about portraying an undesirable future with a level an inevitability high enough to generate strong will for actions, but not too high to become paralysing and self-fulfilling¹. Helping to adjust the forecasting depending on the actions taken and the known and unknown uncertainties is what the models and scenarios are made for. But what they don't always see is the varieties of paths that can emerge as well as what can happen in the life at the margins (both the emergence of utopian transformations and the too common forms of capitalist 'expulsions').

The introductory paragraph, although seemingly mocking common phrases used to provoke change, should not be interpreted as cynical. The issues of biodiversity loss and climate change are incredibly serious, and their crucial aspect relies on the ways in which they relate to an infinity of other dangers, risks and social issues. The alerts keep multiplying to unprecedented numbers, revealing not only isolated issues but also new links and interactions between previously unrelated ones. Nonetheless, when trying to study objects that are

¹ This phrase is also typical of the recent transformation of the ecological rhetoric. See for a discussion see the article *Bientôt il sera trop tard* by Flipo (2018).

impregnating so much our times, both socially, politically and personally, trying to put at least momentarily some distance between the researcher and all the actors working or doing activism on those issues with their respective prioritization, could help, not to gain 'the' objectivity, but maybe to widen the picture, being more open to a variety of interpretations and arguments, as well as gaining an ounce of reflexivity regarding our own emotional engagements and desires for change. These questions relate to the sometimes ambiguous positions of researchers working on issues on which they are not neutral and that often disturb the supposedly well-oiled machinery regulating the relations between the distinct fields of science and politics. The relative distance that I intend to put is not an illusory detachment from my own affects and interpretations, but a desire to take into account how they are shaped by the most common discourses around the issue of biodiversity.

A new Flood seems to be around the corner, with all its mythological weight and spiritual disturbance, but this time it is documented with mountains of data, rivers of numbers and oceans of reports, which amount do not seem to get the oracles to agree. From the prophets of doom to the still singing cicada, the nature of the moving sliders that may express our crossing of modern Rubicons, or where we may rub ourselves against turning points of unforeseen consequences, and play with processes at the edges of numerous known, know-unknown or yet to be discovered or acknowledged (unknown-unknowns) possibilities of irreversibilisation. But both the links that are created and the irreversible aspects are not unified and homogenous, they depend of course on the scales which they are taken into account, but they also often hide highly disparate and heterogenous consequences on and responsibilities of the milieux of social groups and their more-than-human collectives, disparities that are sometimes rendered visible by knitting back together the social and environmental issues through the question of justice.

i) From personal interrogations to theoretical encounters

As the issue of climate change was already strong for a few decades, it seemed that the one of biodiversity was gaining traction and visibility. What did it mean to talk about sustainability when considering our impacts on biodiversity? It had been absolutely fascinating to see the emergence and diffusion of the concept of carbon compensation, which would link an amount of this specific greenhouse gas, that 'I' would emit through my activities, with actions of capturing it or reducing the emissions of 'others' (not me!) in another part of the world, and its positioning as a cornerstone of climate sustainability. The invention of carbon credits along with their dedicated market was taking the concept to new heights previously unimaginable. But another instrument, which is becoming well known even to the non-specialists and already widely critiqued, literally blew my mind when I found out about it: the biodiversity offsets. It seemed at first so grotesque that I couldn't believe that it was seriously considered to become a 'normal' operation to be implemented in national policies. It almost seemed that anti-ecologist groups were applying the old saying of 'the bigger the lie, the more people will believe it'.

But, of course, it's not about 'lying' and, now looking back, what left me incredulous was the transformations and reconfigurations it was seemingly revealing, relying on and implying with regard to what sustainability and biodiversity were about, and 'our' relation with the natural world. Becoming more chimeric than ever, Nature definitely wasn't anymore what it used to be. As I started to wonder "who are we to do that?", soon evolving in "who do we think we are to think it is correct to do that?", I quickly oriented me

toward thinking that, in this question, the properties of the “what was done” were as important as those of the “who” was doing it. But the two had to be deeply connected, and that this connection had to be underpinned by ethical stances.

Therefore, when I started to think about going back to the university to do a PhD, and read some literature to write a proposal, one of my interrogations was the striking difference between the discourses on the environment and its preservation, at all levels, and the actions, considered to be far from allowing reaching (or even going toward) the assigned goals of sustainability. The assigned origins of this failure seemed to shift between a collective one, that is of politicians unsuccessful at resisting the economic vested interests as much as a failure of democracy and social mobilizations, and the sum of our egocentric individualities, irresponsibles despite a growing guilt-making individual responsabilization, not adopting the ‘right gestures’ and refusing to ‘sacrifice our way of life’ while actively keeping our heads in the sand.

From this starting point, the issue appeared to be one of individual and social cognitive dissonance, psychological bias or denial. The problem with those approaches, I later found out, is the emphasis put on an overarching positivist view of an objective science that could decide where and when occur the dissonances and biases of the credulous actors, inasmuch that it folds everything back on an analytical grid that would allow the researchers to qualify whenever actors righteously acted and when they correctly reasoned. Doing so, it also doesn’t acknowledge the multiple points of view emerging in the milieu and the work of actors to make themselves an opinion, make issues emerge and their strategies for provoking transformations.

Following my quest for answers, it emerged that a crucial concept could be what sociologists have called for a few decades the “social production of reality” and the historical relation of this production to reflexivity, that is the accountability of actions in context. Symmetrically, it has been described the continuous work that is required for the “social production of ignorance”. This type of framework, considering the reflexivity as a lever, has been used to qualify the transformation of the reflexivity to allow previously unacceptable changes in terms of “modern disinhibition” as well as to observe the occurrence of “schisms with the reality”. For Stefan Aykut and Amy Dahan, the schisms they describe with regard to climate action reveal a discrepancy between the ways of representing, reflexively and politically, individually and collectively, the actions undertook as being environmentally responsible versus the actions in themselves. While the notion of ‘schisms’ might help to perceive and name the analytical and discursive gaps between the different spheres (scientific, political, economic, ...), it may be more interesting to describe the distance between the various accounts of “what’s going on” and “what are we doing about it”, depending on the actors and their perspectives, than between those accounts and the ‘reality’².

At this time, encountering works in environmental political theory helped me to put in perspective the notion of sustainability. Quite simply, it should be broken down by not focusing on ‘the’ sustainability, and whether political decisions were going to lead us toward sustainability, but on the analytical questions of ‘what is it to be sustained’ and ‘for whom it is to be sustained’ when the notion of sustainability is put forward with technical and scientific angle described as the post-politics of sustained unsustainability (that later resonated with an artistic installation of a neon sign that read “sustainable self-destruction”). On the contrary, seen as a political concept, it is possible to see the idea of sustainability not as intangible or objective, but as a socio-historical construction, which allows it to evolve alongside the political values and goals of the entities putting

² The approach is in particular less conceptually flawed, as analysed by Jean Foyer (2016) in his discussion of the book *Gouverner le climat ?* by Stefan Aykut and Amy Dahan.

it forward. But while the approach favoured by some Marxist geographers and political scientists focusing on post-politics, post-ecology or post-sustainability, and that aim at the disclosure of simulacra and invisible superstructures, are appealing and do provide useful, meaningful and intellectually stimulating descriptions of trends that are difficult to grasp otherwise, they also tend to have an either conspiracist or 'matrix' systemic flattening components that do not help much when trying to understand the action of local actors, the trajectory of specific issues and alerts and the reconfigurations emerging from the frictions of heterogenous "milieux in interaction". "Post-" theories seem to often let think that reflexivity, individual and collective, is mainly used to reassure us by telling ourselves much nicer stories that we probably should. But stories, as social accounts, are never left undebated and unchallenged, at least in milieux not entirely under the control of an entity and where freedom of speech is a somewhat tangible reality. When looking at controversies, the actors forge themselves the arguments criticizing positions, dispositifs or systems, to a certain extent that could be understood in terms of gradient, thus supporting alternative interpretations and effectively leading to reconfigurations of problems and solutions.

ii) The unstable edges of the political

A transversal preoccupation in the descriptions and analysis presented in this thesis is to see the points that are at the frontier of what is accepted to be political and what should just be technical, so to ease the discussions. It would be wrong to simply denounce the post-political attitudes of some actors as being the dispossession of others from their rights or possibility to have a say, to debate, since in many cases situations are framed in such a way that most of the actors can and do agree on "what is", or "what is going on", and that in many cases these basic agreements are necessary for "normal" social relations (whether with institutions, fellow humans or more-than-humans). To think that these agreements exist are in many cases legitimate, and they are not an attempt to expressively or consciously or positively or actively or explicitly impose a social order on others (but it can also be). On the other hand, despite the sometimes acceptable presumption of "good intentions" (or the absence of "bad intentions"), some actors might suffer from it, perceive it as a form of violence, or simply contest its apparent consensual presentation. This is usually when the question of repoliticization enters the discussions. While it is certainly not to the sociologist to define the borders of 'politics', it can certainly be observed that transformations of the definition of the extension of the political (and the most famous example is the feminist call to consider the home as a non-strictly private place, with all its implications) not only do happen and are used strategically by the actors, but that maintaining them at a given place is a constant and somewhat always partially failing work.

For Pellizzoni (2011), first, "the politics of facts intermingles in subtle ways with the politics of interests and values. Second, there is no linear sequence between politicization and depoliticization". He also noted the effects that can have different discursive strategies relative to techniques and politics depending on their approach of expertise and political negotiability over the increase or decrease of depoliticization. Based on these circulations, the idea of this dissertation is therefore to consider and study the moving 'edges of the political', in a way that relates to the growing discussions and literature on the strategic depoliticization of a number of debates, the usually associated claims of need of their repoliticization, but also to the 'boundarization' of an ever-growing quantity of objects (i.e. the 'critical unveiling' of their status of boundary

objects). No more need of interfaces, everything is both, or in the middle, or in transaction, or at the border. The idea of edges, and of their displacements, seem to allow considering those descriptions not as erroneous, but as contextually situated, meaning that actors actively and continuously work toward the displacement of objects, in the situation that concerns them, toward more or less politicization and debatability, or toward a foreclosure through authoritative expertise and objectivity claims. These displacements often imply a recontextualisation and redefinition of the 'objet-term' and scientists are often playing their gatekeeper role.

In an article on the concept of resilience, to take only one arbitrary illustrative example for now (and I could have equally chosen an article on the concept of biodiversity itself or basically any of its related concepts), Brand and Jax (2007) complain about the tension between the original descriptive concept in ecological science and "a more recent, vague, and malleable notion of resilience used as an approach or boundary object by different scientific disciplines" (they don't seem to acknowledge that it was actually taken from other disciplines). On this basis, they worryingly express that "even though increased conceptual vagueness can be valuable to foster communication across disciplines and between science and practice, both conceptual clarity and practical relevance of the concept of resilience are critically in danger". And since it is, according to them, a concept so fundamental to achieve sustainability, they propose to reformulate it so to be again a "clear descriptive concept". I've therefore intended all along my research to stay aware to these types of actions aiming at moving the blurry edges of the political, which are themselves critical processes from the point of view of the actors.

The separation with the political is also visible within the social sciences, in particular through the various types of deterministic approaches found in psychological and cognitive studies, but as well in the field of sociology, within which many works toward revealing the superstructures that imprison us. On the contrary, the perspectives developed in the literature encompassing the diverse pragmatic sociologies put forward a distinct sociology of the actor that, by giving back agency and creativity to individuals and groups, allow to perceive the variety of paths that controversies, as well as the dialectic problematization and resolution of political issues, may take due to their unpredictable and surprising moves while working toward maintaining, reproducing or transforming the social order. Restating their agency is not to say that they are freed from existing structures, tendencies, values and power dynamics, but that it is often observed that they are never sufficient to explain the particular and localized unfolding of an issue.

From this perspective, it is possible to take into account the multiplicity of their points of view and of the strategies that are unfolded to resist domination or to have a social impact. The production of discourses is therefore a specific type of political action on the part of the actors, aiming at a redefinition of particular aspects of the social reality that can only be understood in relation to their context, and should be considered in its performative and normative dimensions.

This theoretical framework also helps to understand the dynamics between the different levels and overcome the opposition between micro and macro by considering that the macro-level can only be accomplished at the micro-level through specific practices and institutions. But, more importantly, it is about trying to understand how the experiences of actors help them to redefine an issue, gaining grip on a problem so as not to allow its definition to be confiscated, and generate new ways out.

In this sense, another possibility is to consider the question through the concept of framing, and the social definitions of frames and their relation to interpretations, understandings and problem resolutions. Human beings, not being able to grasp at any moment all the complexity of the world, have to use cognitive artefacts that often lead to rely on preexisting and shared interpretative schemes, frames and classifications, as well as operating a logical bricolage in the attribution of meanings and causalities. This also leads actors to prioritize issues and to assume by convenience common understanding over certain facts, but this assumption may also become an attempt of an imposition on others when they do not wish the diversity of views to enter the arena and disrupt their framing of an issue.

On the other hand, observing the framing processes within processes in transformation allow to go beyond a static vision of the issue and study the circulation of knowledge as well as its reconfigurations. As knowledge moves and is made to move, the processes of translation and the dynamics of reframing of an issue inform “the collaborations through which knowledge is made and maintained” (Tsing 2005), but also controlled, transformed and legitimized. The idea is therefore not to do the sociology of the human-nature interaction but the sociology of how the concepts, ethics and knowledges are travelling and used to regulate the collectives of which humans belong in the variety of milieux they inhabit or that concern them at the different scales.

From a sociological point of view, constructivist theories also helped to understand the social life of scientific concepts, and can still be productive as long as it remains clear that materiality does impose a tangibility that is non-negotiable, even if its exact nature may remain inaccessible. Considering the issue of biodiversity as a form of travelling knowledge makes possible to view it as a quasi-object, composed as a hybrid of a material reality of which specific parameters are selected and studied by the natural sciences, and the sense that the society, and specific actors inside it, give to it. According to this perspective, material facts exist for humans through the meanings that are socially given to them, through their embedment in perceptual frames. The question therefore becomes to understand how biodiversity is made a matter of concern, that is to seek the arguments that are made to promote it, and how they frame biodiversity in relation to why we should care about it. But while knowledge moves, it is not neutral: in the process of its construction, evolution and use, the actors are also, intentionally or not, redefining aspects of the reality, transforming the frames of interpretation previously institutionalized in the society, forging new ethics and legitimizing new norms. Biodiversity may also be seen as the object of a continuous work of ‘deboundarisation’, that is the object of a never-ending attempt of purification from the experts who want to keep the hand on their work by separating it from political debate.

Another way to look at the issue of politicization versus depoliticization and the displacements of the edges of the political is to understand the processes of translation of public issues as a circulation between two forms of politics in tension, which are inter-politics and intra-politics. Those terms, introduced by Larry Lohmann during a conference³, embed distinct regimes of translation. The first one can relate to discussions regarding a predefined problem, with the assumption that things and meanings preexist it (like the fact that when talking about a ‘forest’ it is assumed that there is an objective and universal thing called ‘forest’), and

³ Larry Lohmann, 22/09/2020, Ecological Struggles on “Middle Grounds” as Struggles against Authoritarian Co-Figuration: Translation and History, Pollen 20 Conference. I haven’t been able to find any paper presenting this work yet. <https://event.pollen2020.exordo.com/presentation/261/p019-a1-ecological-struggles-on-middle-grounds-as-struggles-against-authoritarian-co-figuration-translation-and-history>

that translation between languages is just about looking for equivalents, the communication being successful when the correct equivalent is found and transmitted once and for all. Intra-politics, on the other hand, expresses situations in which the maintenance of incompleteness of the translation process is considered a successful communication, leaving open further reconfigurations, and in which the definitions of the nature of the things debated, of their meaning and of the problems to be resolved are intrinsic issues of the debate.

While it could be appealing to consider that inter- and intra-politics correspond to distinct milieux, institutions or cultures, it would lead to their sterile essentialization. In fact, it would be more accurate to see them not only as different moments in the development of a controversy or of a dispositif, for example, but also as possibly superposable at a given time, since a discussion may focus, simultaneously or successively, on different scales, frames and objects which are not all equally stabilized. In this sense, they are also the temporary results of processes, and can be reversed when new information or actants are taken into account, or that agreements are found. Nonetheless, as expressed earlier, the depoliticization (inter-politicization) by stabilization and foreclosure is the goal of all processes, and some actors would actually prefer and work for the ongoing non-stabilization, even if that doesn't impede moments of opening and of foreclosure, moments of agreements and of disagreements.

The advantage of this perspective is not to consider 'depoliticized' issues as leaning toward a non-political status, but to both consider that it is still political, in a restrictive but widespread form called inter-politics, and that the tension and circulation between politicization and depoliticization is itself political, being therefore also a potential, and sometimes central, subject of deliberation and controversy, as well as the product of power relations but also of the degree and type of political homogeneity assumed by the actors. This is then linked to the continuous formation and transformation of milieux, which may be relatively and particularly (scale and situation-wise) homogenous themselves but heterogenous between them and interacting with more or less friction.

iii) Living in this world as moral beings (and sociologists)

The framework of my research can be connected with the one of a moral sociology⁴, as defined by Frédéric Vandenberghe in *La sociologie comme philosophie pratique et morale (et vice-versa)* (in Caillé and Vandenberghe 2016). Contrarily to a sociology of morality, which considers that morality must be explained by social facts, and usually only seek to explain the visible and explicit morality, as it appears here or there, a sort of epiphenomenon as some sociologists consider it, moral sociology starts from the principle that it is

⁴ I refer here to the moral sociology put forward by Frédéric Vandenberghe, and use mostly in my analysis the word ethics because it avoids an excessive orientation toward the concept of value (which consideration and integration in the analysis is nonetheless inevitable and indispensable). The word 'moral' historically referred to a number of institutionalised precepts, in particular in the form of religions, often strictly and violently applying to individuals and groups regardless of their adhesion, the word ethics does not seem to bear this heavy connotation, being more a process of collective deliberation (this could nonetheless be easily contested when considering its use regarding the protestant ethics, for example, although it might be precisely because of the difference that protestants wanted to draw with catholicism). While ethics are closer to a processual practical philosophy, on the other hand it seems that values are mostly composed of sets of single words (or numbers), which are organized into a hierarchy but are mostly (more or less defined) ideals which have to constantly be reorganised and interpreted to have any implications on the course of practical thinking and actions. But the three terms overlap in many cases, and their axiological basis might actually be the best way to qualify their ensemble.

constitutive of the whole of social life. So, for Vandenberghe, a moral sociology is not a specialized sociology but a general sociology, that is to say that it does not describe a subset of social life (the one in which actors express that they take moral positions) but is a perspective on the whole of social life and focuses on its moral dimension, by posing that “the principles, the norms and the values are not only regulators, but constitutive, and that they are not only constitutive of certain fields of action, but of social life as such”. It is therefore a question of perceiving, locating and analysing the ways in which morality infiltrates and is expressed in all parts of human life. But his idea is also to link philosophy and sociology through the attention to the actors.

This seemed particularly pertinent for me since it made echo both to a difficulty that I encountered during my research and an intuition that I had to overcome it. It happened to me on a few occasions when I presented my thesis project that my research questions, related to environmental ethics, were considered mostly philosophical ones. Nonetheless my objective was not to think about them in an abstract and ideal way, but to see concretely how actors, in specific examples, got by in their practices with these questions. Citing Gramsci, for whom every man is a philosopher, and Boltanski, for whom the actors, endowed with a critical sense, produce spontaneous philosophies and use a moral language when they denounce injustices, Vandenberghe affirms that it is possible to make an unmistakably philosophical question more sociological by opening it up to the actors themselves. The coincidence between philosophy and sociology therefore happen on the ground.

There is a diversity of morals that are linked to an infinity of controversies, since even when there may be an agreement on the main principles, the practical ‘applications’, or better said the practices and experiences in which they become intertwined, are always conflictual, imperfect and contradictory due to the fact that any question, orientation or action contains a dilemma to be resolved. The question of morality of actions also relates to the inherent irreversibility of being, and of what has been done, and therefore a sort of metaphysical ethic. Then, one of the highest stake among actors, and which is the theme of the book of Chateauraynaud and Debaz, *Aux bords de l'irréversible* (2017), is to determine, facilitate or prevent the reversibility or irreversibility of the course of actions.

Finally, since moral sociology examines how morality produces, constitutes and regulates both actions, institutions and social structures, then it also includes in its scope how morality produces, constitutes and regulates sociological research. The present research could therefore also be understood through this lens, in particular since the desire to realize it emerged from an intimate questioning over the morality of practices. As such I rejoin the position of Luigi Pellizzoni who, inspired by the public sociology of Michael Burawoy (2005), considered in one of his books that the theoretical or academic issues that he was addressing were so “in close connection with their implications for political or public ones – how the accounts of materiality and knowledge impinge on social groups, populations, ecosystems, or the planet as a whole; and how a critical engagement with such accounts may strengthen our capacity to understand and face the challenges ahead” (Pellizzoni 2016). By bridging my preoccupations with the ones of the actors described in this research, not through alignment but by considering them as a non-independent, the idea is therefore to allow not only to better understand the challenges ahead, but also how they are made to relate with moral considerations.

iv) Premises for the study of the relation between biodiversity and ethics

In order to address the questions of this dissertation, I've started my research on the basis of a couple of hypotheses, which are actually closer to premises, since my intention was not so much to demonstrate them, as they may already be theoretically proven, but to show how they distinctively play out in different contexts, and in particular in the implementation of biodiversity offsets policies in Colombia, reason why I put forward the idea of exploration in the title of the dissertation.

Firstly, there is an intra-action between knowledge transformations and ethical preoccupations.

The effects of 'new' knowledge, and its links to the way of understanding an issue, can, it seems, be understood in two ways. It can simply add new elements that will be evaluated by actors within their ontological and axiological standpoints as well as in relation with the ethical meta values they hold (for example the discovery of a well-known protected species in a place that would be impacted, or the obtention of a routine measurement out the regular range). But it could also be considered knowledges that may redefine, displace or transform ontological, axiological and ethical perspectives, usually together since they are interdependent. For example, it could come from the hypermodern consideration that the 'natural' doesn't exist anymore, everything is human made or impacted and therefore humans' wish is the only basis for judging whether some areas should be preserved or can be transformed; or from considering that biodiversity actually means that I'm/we're connected to the whole biosphere through the web of life; or from the design of a set of new measurements for the qualification of the health of an ecosystem. This type of interpretation is for example visible in the description of the progressive separation of nature and culture through the extension of what has been referred to as either the "modernity" (Latour 1991) or the "naturalist" ontology (Descola 2005).

In the case of the development of alerts, to take another example, Chateauraynaud and Torny (1999) described in their sociology of the alert and the risk that actors had to develop a vigilance based on an openness to new arising elements so to classify them through the making of previously unexisting links and causalities, and put them in perspective through their replacement in a series of precedents that will help inform the emerging properties of events in development. But it can be considered that this vigilance and the way new elements become integrated are not of the same type in the case of predictable and predicted risk with relatively well-known consequences than in the case of an unknown risk which can only be approached using reasonings relying on post-normal science and which may provoke unforeseen reconfigurations of the milieu. More simply put, the vigilance toward new elements depends, or in many cases is considered to have to be adequately related to, on the ways the risks are perceived and in particular their potential material consequences and ethical questions that they pose.

Finally, the answer to these ethical questions arise through processes of valuation linking facts and values. Nonetheless, the meta-values, that evolve slowly and inform the theoretical positions that should be taken in front of specific problems (for example the defence of vegetarianism because of egalitarian values or the protection of all species because of the intrinsic value of life – even if the translation of the application of those values to an individual versus a species is far from being trivial), enters in friction with the localized and

contingent process of valuation of actors, that may be informed by those meta-values but which confronts them with an understanding of the situations both much more detailed, subtle as well as incomplete. The meaningful articulation of the meta-values and the situations thus happens in the form of a *trajection*⁵ linking the experience of the actors and their milieu.

Secondly, the transformation of the knowledges regarding the relationships between humans and non-humans relates to human ethics toward biodiversity.

Following the evolution of the ways biodiversity and its associated threats have been successively presented might allow to understand the evolution of the descriptions that are made of the relations between biodiversity and human activities. The variety of redefinitions of what biodiversity is are reflected on the modes of valuation and the general ethical stances about what should be worried about, what should be done about it and how.

I therefore intend to study the relation between the reconfigurations of the knowledge about biodiversity and of the definitions of its sustainable preservation with the ways this knowledge is mobilized and redefined by a variety of actors in their practice. This implies to consider biodiversity, and specifically biodiversity offsets, in the modern historical process in which humans tried to find concepts to help them select and describe the meaningful properties of their environment, to characterize the ways those properties relate to human life, and what humans should therefore do to preserve the cosmological order that allow life to continue. Considering a contingent set of those situated processes as specific types of ontologies, Philippe Descola (2005) proposed that those properties were emerging from the basic inferences that humans make about the kinds of beings populating the world and how they are linked together. Those ontologies may then play a crucial role in the formation of ethics toward other beings and the environment.

While ethics are involved in all aspects of the relations between humans and the environment, it seems that they are particularly rendered explicit when defining the type of impacts that stay within acceptable limits. In modern societies, those calculations usually involve a kind of cost-benefit analysis, weighting what are considered negative impacts at the social, environmental or ecological level against their positive counterparts, revealing more deeply the values and ethics that are involved and performatively reinforced in this process. The emergence of biodiversity offsetting policies is a great opportunity to understand how those calculations are made and how is defined an equilibrium.

⁵ The term *trajection* was crafted by the geographer Augustin Berque in 1986 (Berque 1986) to overcome the dualism between the subject and the object, between the subjectivity and the objectivity with regard to the perception of nature, which reality isn't subjective or objective but emerges from a *trajection*, that is the ongoing dialogic relation, between those two poles.

v) Structure of the dissertation

BIODIVERSITY

With regards to the question of the relationships between knowledge and ethics, the issue of biodiversity has a privileged position. Being conceived from its inception as a hybrid of science and normative precepts (something less true for the question of “climate” in itself, but definitely for the expression “climate change”, for example), debates and controversies rapidly emerged around its status and the legitimacy of given scientific disciplines and social groups for the definition of its practical and more metaphysical meanings, which are going to be the focus of the First Chapter.

From a sociological point of view, the variability of the meaning of concepts — dependent on multiple factors and subject to permanent negotiation — allows observing how different actors use them according to the settings in which they insert their actions and discourses. Thus, it can allow the study of the ways the actors represent to themselves, interpret and understand different social, temporal and spatial contexts — both determining and redefined permanently, sources of meaning and identity to be nourished in return. In this sense, the emptiness of the signifiers is in reality filled by the actors with their own understandings of them. Thanks to the numerous cultural backgrounds and contexts in which it is used, there are numerous definitions of what the term biodiversity actually encompasses, and many ways to understand them.

The emergence of biodiversity as a global issue is established by the incorporation of the related alerts and expertises in international institutions which define structuring descriptive and analytical frames that are then translated at the other levels. While the unilateralism of this transmission is tried to be counterbalanced by the incorporation of “local knowledge” in the global assessments, the very nature of knowledge on biodiversity and of the relation between its components, and in particular the various locally developed ontologies, makes this unifying intention contradictory. One purpose of my research will therefore be to describe the interplay between the three main types of discourses on biodiversity emerging from the formation of scientific facts, through instruments, models and the production of data, from the institutions, as devices of evaluation and management, and from the variety of activists, or more generally people emitting concerns related to biodiversity. The intention will be to see how each of the arguments struggles for internal coherency as well as adaptation with regard to the others, in the form of alignment or oppositions.

ETHICS AND BIODIVERSITY

Following the development of strategies of adaptation to climate change and the integration of environmental management into this paradigm, including challenges related to biodiversity, the second part of the first chapter will describe the ways this evolution impacts the understandings of the relation between biodiversity and the possibility of sustaining human life. The purpose is to understand the relations between the biodiversities that are described and that should be preserved, their properties put forward, why it is said it should be preserved, for whom, and how. And, since there is a relation between the definition of a situation and moral judgement, it will also be to understand how the emergence of those different descriptions are understood by different actors to relate to the ethics toward biodiversity, and how the emergence of the concept

of biodiversity transformed what was previously referred to as environmental ethics. While the notion of value is often used to try to qualify the different ways to give importance to the biodiversity, I will argue that the concept of valuation is much more appropriate to describe the situated processes during which some specific elements of the biodiversity are assigned a temporary value.

More generally, the idea is to draw some of the modes of circulation between the perceptual and preceptual performative and tangible effects of the transformations of the theories and descriptions relative to the nature of nature. To grasp the transformation of these relations, this chapter will then put them into perspective by exploring some of the ways transformations of knowledge may impact ethics, focusing in particular on transformations on the epistemological plan, on the ontological plan, through the change of framings and through the production, transformation or invisibilization of data. Finally, I will take general examples of mechanisms linking ethical transformations to new knowledges, first focusing on the concept of Anthropocene, then on the maintenance of their coherency and on their transformation through conflicts, and finishing by two specific examples relative to the science of ecology and to conservation efforts.

NATURE AND ETHICS OF A SCIENCE-POLICY INTERFACE: THE CASE OF THE IPBES

The second chapter will focus on the interplay of ethics, scientific knowledge and politics at the level of the Intergovernmental Platform on Biodiversity and Ecosystem Services – IPBES. The understanding of the human-nature relationships is framed differently by different actors at different levels when they consider specific biodiversity-related issues. Therefore, in this dissertation, it was necessary to start by focusing on the way biodiversity is both conceptualized and transformed when studied at the ‘global level’ within an institution which is itself representative of the global environmental diplomacy. Indeed, taking into account different levels and institutions not only allows a comparison of the different biodiversity framings but also permits to follow the trajectory of a concept as it is reconfigured or even reclaimed by the various actors and how these interactions impact the ethics of the politics of biodiversity.

Based on the observation in 2019 of the final intergovernmental debates for the validation of the Global Assessment Report on Biodiversity and Ecosystems during a Plenary of the IPBES, this chapter describe the type of the “science-policy interface” that the IPBES claim to be. It then focuses on the institutional process that leads to the production of the peculiar object that is a summary for policy-makers written to summarize the work of dozens of scientists and finalized by States’ representative discussing it word by word. Some of the discussions are described in detail, so to be able to analyse the different types of arguments that are made for requesting changes of the text as well as the circulation between political and scientific positions. Finally, the rest of the chapter focuses on the tensions that surrounds the interface, regarding its political and scientific status but also the intended, desired or claimed consequences of the knowledge produced and diffused.

INTERNATIONAL DEVELOPMENT OF BIODIVERSITY OFFSETS

Biodiversity offsets emerged in the 1970s in the US and then started to rapidly expand from the beginning of the 21st century. They have been described as a way to compensate the destruction caused by a development framed as inevitable, therefore reducing the negative impacts that projects like mining, hydroelectric dams or

transport infrastructures have on the environment as well as on biodiversity. The general idea is that what is impacted can be evaluated, qualified, quantified, and that compensatory measures, such as preservation, restoration, recreation, can be defined to fit the impact according to a number of considerations and modes of calculations. By the necessary explicitation of a large number of parameters relevant for those who are theorizing, developing the policies or implementing them, and ways to weigh them against each other, biodiversity offsets are a very rich object to study the way relevant parameters of the environment are isolated, their ontological status and the relations between them.

Biodiversity offsetting is a concept which scientific and technical aspects are unstable and constantly redefined, making its implementation and practice highly subject to interpretation. What it means to protect it is, moreover, at the centre of deep controversies, including among researchers themselves, regarding the ‘nature of nature’ and the legitimate type of stewardship that humans should be entitled to. The biodiversity offsets are also part of a group of other contested concepts (and practices) to which it is considered to have a close relationship, like those of natural capital and ecosystem services, because of their utilitarian detached view.

The third chapter will therefore retrace the history of environmental compensations and in particular of the biodiversity offsets, showing the main actors who led their theoretical development and advocated for their use to companies and governments. I will then describe their main characteristics and their related controversies inside and outside of the academia. Regarding academic debates and knowledge production, I will show the variety of arguments and “framings” that are opposed by the actors in their publications and show the composition of the main core of producers of scientific papers in biodiversity offsetting. Finally, it will be seen how different actors relate the emergence of biodiversity offsets to a number of ethical issues, and that the successive evidences of failure obliged to constant attempts of improvement and renewal of the offsets’ promises.

DEVELOPMENT OF BIODIVERSITY OFFSETS IN COLOMBIA

An important aspect of my research is to understand how the concepts of biodiversity and biodiversity offsets emerged in the context of the discourses relative to the existing, possible, desirable and necessary relations of the humans with the non-humans in terms of normativity and performativity. The analysis focuses on the differences and potentially conflicting aspects of those descriptions, but also how they are reconfigured in situation by the actors. In order to investigate this question, my research proposed to study the dynamics of explicit reinterpretations of the relations between biodiversity and human life by a variety of actors from the international to the local levels by considering them as different forms of knowledge production relating to specific practices and modes of valuation.

The study of the implementation of an instrument such as biodiversity offsets in a specific country then allows to observe the translation of general concepts into a specific context. In particular, its translation into normative frameworks supported by public institutions that includes guidelines for their practical application, doesn’t happen mechanically, but that it implies a controversial joint reinterpretation of means and ends according to the understanding of the local specificities that always rely on the work of specific actors who have to account for their positions and decisions. As the biodiversity offsets are developed, it is the whole set

of issues relating to biodiversity and their relations to other ones as well, that get reconfigured. This redefinition implies the design of new categories, measurements and evaluation procedures.

Doing my fieldwork in Colombia came from my personal research interests, which had led me in the past to conduct research in two other countries of Abya Yala-Latin America, as well as more pragmatic points, including the existence of links between my laboratory in Paris and researchers in Bogota, reinforced by a common work on the issue of asbestos in Colombia, and the fact that the field of research on offsetting was much less saturated there than it was in western countries. I also had a strong interrogation regarding the reasons that would lead a country with such difficult social conditions, struggling for peace and legality, and strong land titling issues, would consider and want to implement such a (at times caricatural) complex and ontologically disturbing instrument. Ontologically disturbing it is because of the number of logical contortions and shortcuts necessary for the construction of ecological equivalence and the possibility for claiming a "no net loss" or even a "net gain" of biodiversity, while it seemed obvious to the vast majority of actors that it is something that the experience will never be able to confirm, that it is impossible to see it or perceive it on the field, and that the only way and context it can 'work' is when they operate classifications and do the calculations from the comfort of their office.

Based on those considerations, the development of biodiversity offsetting in Colombia, the first country in South America to render them mandatory, was also raising particularly my curiosity because of the large presence of indigenous people, which made me wonder how such a wide ontological discrepancy between their views and the one underlined by offsets would be resolved or at least made to coexist. A Colombian friend of mine working with indigenous people recently wrote: "For several days we walked through the forest, we felt the mountain, we learned from each other, we learned to love each other, to care for each other, and we reaffirmed that to talk about territory you have to walk it and feel it to the core, with thirst, with tiredness, with power, with calm, with silence, with mountain, with fear, with respect, with humility – a lot of humility –, with love"* . This way of "feeling-thinking" the territory (Escobar 2016), is confronted with the one that takes precedence when the necessity of "seeing like a state" (Scott 1999) occur, or when nature is reconfigured into a "nature that capital can see" (Robertson 2006). Both ultimately realized by human beings, the experiences, and the types of knowledges and understandings that they each produce, would hardly find any means for commensurability.

On top of what I mentioned before, the case of Colombia to study the way biodiversity offsets are implemented is particularly interesting for a number of other reasons. Among those, as a country which became to be known as 'megabiodiverse', there's a growing sense of pride as well as of responsibility toward the rest of the world to protect it, which poses the question of the articulation of biodiversity offsets with this responsibility. On the other hand, more or less classical or sustainable 'development' is still seen as necessary by many actors, who are also aware of the environmental drawbacks of the multiplication of infrastructures and extractive projects, and it could therefore be wondered the role that offsets are considered to play. On a more technical aspect, the 'baseline' knowledge about biodiversity, on which biodiversity offsets rely heavily, is far from what the level considered to be required, leaving open many questions about the type of knowledge that is used for designing the compensations.

The fourth chapter therefore focuses on describing the origins of the Colombian biodiversity compensation scheme, by considering it within the history of the Colombian environmental protection laws and of other types of compensation. Doing this allows analysing the transformations of the type of natures that

were protected by the successive legislations, and to compare the diverse types of compensations, their focus and rationalities. It then replaces the emergence of the biodiversity offsets in the context of the years during which their design process has started, and focus on the epistemic community that formed around it. After that, the analysis turns toward the specificities of the Manual of Compensations for Biodiversity Loss and the motivations behind the choices that have been made, in particular regarding the calculation of the compensation factor, which allows to understand the relation between technical possibilities and limitations, ecological and social theories, and biodiversity valuation. Finally, the chapter details the various difficulties encountered during the design process of the compensations and the epistemic troubles generated by the concept of ‘no net loss’ of biodiversity.

FIELDWORK AT THE NATIONAL COLOMBIAN AUTHORITY OF ENVIRONMENTAL LICENCES

The development of offset policies started in Colombia with an agreement between the Nature Conservancy and the Ministry of the Environment, and came into effect in 2012 with the publication of the first “Manual of compensations for biodiversity loss”. The compensations then became mandatory for a number of ‘large’ projects and their supervision at the national level has been assigned to the recently formed National Authority of Environmental Licences – ANLA. While at first not evident for me, my first encounters with its representatives convinced me of the interest of orienting my fieldwork there, for which I obtained the authorization not without difficulties and with a good amount of patience. I have therefore spent several months observing the work of its employees, in the offices and in the field, as they were verifying, analysing and evaluating the environmental impact assessments and compensation plans provided by the companies.

The debates about how compensations should be done are closely related to the problem of the evaluation of impacts and in particular the design of the environmental impact assessments, making them key to understand the political normative choices about what matters and to which extent, and how actors reinterpret them in their practice. It is only when it has been defined what is going to be impacted and how it is going to be impacted that can be tentatively defined a compensation that is in line with what should be compensated. I’ve heard many times from the environmental authority’s employees during my fieldwork that it was very important that the compensations be adequately designed so to be closely “related” with the impacts on biodiversity, but this “relation” was never a given and always had to be constructed and justified within the frame of the legitimate valuation processes.

Consequently, the fifth chapter describes the ANLA through its history, functions and organization, but also the tensions that run through it and the numerous critics that it has to face, both due to the failures in the functioning of the institution and the nature of the environmental impact assessments. I then focus on the particular process of evaluation and follow-up of the compensations. In the second part of the chapter, I give an overview of the way I gained access to the institution and the ethnographic observations that I’ve been able to do, including the difficulties that I’ve encountered along the way. Finally, I recount in detail the visits of distinct projects at different stages, where some ANLA’s employees went to in order to verify the proposition of the company or their compliance with what their environmental licence requested, and during which I’ve been able to accompany them. In the cases in which it happened, I also describe the visits made to past or future compensation activities. Those descriptions allow to see how different types of information is gathered,

discussed and analysed, and how are jointly emerging and transformed problems and solutions in relation to normative and ethical issues, but also through processes of valuation.

EVALUATION OF THE COMPENSATION PLANS, CIRCULATION OF KNOWLEDGE, AND NORMATIVE INTERPRETATIONS

The sixth chapter focuses on the conceptual and practical challenges in the implementation of the compensations in Colombia, as well as the processes through which the information is circulated, transformed, verified and evaluated against the normative guidelines. It is based on the description of specific cases but also of formal and informal discussions that took place at the ANLA, of internal meetings and workshops or meetings with companies who came to present their projects or ask questions, or were convened as part of the licensing process – situations that I've been able to observe during my ethnographic fieldwork. This leads to an analysis of the relations between ANLA and the companies, as well as the ongoing processes of maintenance of the right normative interpretations of the compensation guidelines.

As the development of biodiversity offsets in Colombia is quite recent, it offers the opportunity to observe the process of designing (for the companies and their consultancies) and evaluating (for the ANLA personnel) compensation projects in a way that didn't yet fully become a routine for the actors (and in any case the velocity of the constant normative transformations keeps them away from this perspective). As such, they're permanently confronted to uncertainties and doubts, and have to resolve problems often enunciated in ambiguous terms. As we will see, the relation between the ANLA and the companies encompass a plurality of contexts and modes of communication, and the discussions about the validity of certain propositions vary in their degree of formalism and explicitness according to the situation and the degree of coercion deemed necessary.

But a lot of the exchanges both inside the ANLA and with other actors focused on the ways the instructions presented in the Manuals, including the concepts and more or less clear guidelines, were to be understood. This chapter will thus finally show that, in order to reach the goal of homogenizing the compensations and guarantee their adequacy to what the spirit of the norm was understood to be, specialists of the institution have to constantly try to carry their message throughout the institution to the employees who will do the evaluations, as well as toward the companies and consultancy. Nonetheless, both the constant evolution of the norms, instability of the employees and specificities of each project render this circulation closer to an unceasing maintenance than an achievable end.

BEYOND THE EVALUATION: VALUATIONS OF THE NORMS AND OF THE ADEQUACY OF ITS APPLICATION

Actors grappling with a norm regularly encounter themselves in situations which they may consider unsatisfactory and try to resolve the ethical dilemmas that they face by assessing not only what the norm seemingly force them to do but also what may be negotiable if only the right argumentative grasps were to be found. Indeed, depending on its particular specifications and on the situation, the norm can either be considered too strict and too vague, or both. The actors therefore wonder on which elements to base themselves to link the dots between guidelines, which may either be intrinsically unclear or have to be applied in situations which

cannot be made to easily match existing categories, and the validity of certain claims. The seventh chapter will thus first focus on the ways they intend to do that, and in particular on the reference points that conjured in order to establish what they consider to be suitable technical justifications, so to show the moral economies that are built behind them.

As different propositions, plans and activities are made by the actors as they try to get their head around offsets, those are thus not only evaluated according to a strict analytical grid which the Manual would provide, but valued as well through putting into relation with numerous other preoccupations and elements which go far beyond what the guidelines express. Nonetheless, limits of acceptability are to be established so that the dispositif formed by the environmental authority may maintain its hold upon the biodiversity compensations process, and those overpassing them may be accused of either incompetence, bad faith or of being subjective.

The description of the work done in the institution therefore allows to give an account of reciprocal reconfigurations provoked by the frictions between norms that are institutionalized into an administrative dispositif, the experience of the actors who have to manipulate them, as well as the resistance of the territory against its reading only through remote sensors as well as its reduction into commensurable elements. This finally leads to observe a constant political overflowing above the dikes of a conventionalist objectivity and of an axiological normativity, undermining their function of fixation and stabilization of uniformly and universally applicable spaces of calculation.

SCALES AND VALUATIONS OF BIODIVERSITY IMPACTS AND COMPENSATIONS

The offset plans are part of the environmental impact assessments that the companies have to provide to obtain a licence for their projects and strongly relate to the definition and evaluation of impacts. The observation of the work done within the environmental authority is therefore also the opportunity to analyse how the evaluation of impacts is framed, and in particular how are defined (and contested) the proper scales through which a relation between an activity and an impact is rightfully considered and established, relation which will then be used for assessing the appropriateness of the compensation. Indeed, while being crucial in all the stages of the assessments, scales of analysis, whether temporal, geographical or relative to measurements, are neither natural, predetermined nor consensual, but relate to both processes of visibilization and invisibilization, and of internalization and externalization. Scales intervene in the framing of the scope of the mitigation hierarchy, but also in the analysis of all the environmental components taken into account in the assessments. Those are then compiled to form what is designated as the area of influence of a project, area which is then used as another scale of analysis to understand the relations between the different impacts. The biodiversity elements taken into account are themselves of various natures and can focus on specific localized elements or on dynamics or on the relation between various elements. A scale has then to be chosen in order to perform each of the types of analysis that are considered pertinent so to evaluate the nature and magnitude of the impacts. The compensations themselves involve a whole other set of scales of different natures, because they aim to take into account various heterogeneous biodiversity parameters which require the production of specific indicators, and the consideration of particular administrative and geophysical constraints.

The eighth chapter therefore focuses on the relations between the bringing into being of multiple types of scales, as means of producing knowledge about biodiversity, and biodiversity valuations, whether for assessing

impacts or for compensations. In particular, it is analysed their evolutions and contestations through a number of empirical examples, by putting emphasis on the political and ethical aspects that the actors see in those articulations.

vi) Methodology

Since this research takes as object the reconfigurations of biodiversity knowledges, in particular relatively to preoccupations and the envisioning of solutions and required actions, I had to be able to do describe and analyse them in a variety of distinct but related settings associated to different contexts. Those relate to the type of organization but also what is usually considered to be their scales, in terms of institutional reach and the types of actors which are involved in it, but also to the scales of the biodiversity considered and the type of knowledge produced about it.

This thesis is thus seemingly organized from the most ‘global’ settings, both in terms of the circulation of the term biodiversity, of the institution in charge of producing assessments about it – the IPBES –, and of the making and dissemination of the biodiversity offsets, to the national and then specific-local settings, through a focus on the development of environment protection laws and biodiversity offsets in Colombia, the control of their implementation by the national environmental authority and the focus on specific projects, challenges or methodological development. Nonetheless the analysis presented also ought to show that the transpositions between them are not automatic, and that the definition of the nature of their respective scales and their supposed hierarchy is not a given that can be taken as an assumption when describing them but are only projects of the actors. One example among many is the way pilot-projects and use-case scenarios were used to promote the expansion of biodiversity offsets through the to serve as examples to be generalized or serve as inspiration elsewhere. This transversal trajectory proposed here allows to follow the generations, circulations, and reinterpretations of concepts as well as moments in which they are challenged and transformed, according to the specific constraints, axiological positions or frictions due to the articulation of different actors and scales. In sum, each of the chapters of the dissertation proposes an entry through different modes of production of different types of knowledges about biodiversity and articulate them with their relation to their hoped, expected or dreaded futures expressed as preoccupations and goals.

This research design was inspired by the pragmatist sociology developed by Chateauraynaud and Debaz (Chateauraynaud and Debaz 2017), and in particular by their “six sociologies in search of actors” relative to six logics of action that sociologists can take as focus, and that they may try to articulate so to offer a description of the phenomena avoiding locking itself into a too narrow approach. Those logics (and therefore the type of observation and sociological analysis that goes along with them) are the dominant discourse, the counter-discourses, the action of the dispositions of evaluation and of management, the alerts and emerging risks, the milieux under control of an entity and the heterogenous milieux in interactions. Wherever relevant, I tried to provide some historical context, even if in a limited way, so to not only allow understanding through different places and perspectives but also their temporal transformations.

In practical terms, this thesis is based on a multi-situated fieldwork including ethnographies, qualitative interviews, qualitative and quantitative scientific literature analysis, analysis of controversies at different levels through the use of specialized softwares, and a deep dive into the abundance of documents produced by

Introduction

institutions and companies. While the research focus of my thesis progressively narrowed to the implementation of biodiversity offsets in Colombia, it subsequently seemed necessary to also include a wider view of the meaning of biodiversity, of its seizing at the intergovernmental 'level' and of the context and actions which led a relatively small group of people and organizations succeeding in advocating for and spreading biodiversity offsets. On the other hand, I thought that my focus would have to go 'down' to the implementation of compensations for a particular project in a particular place at a particular time and in a particular context. I was indeed initially more inclined to look at the way the calculated environment of the compensation could be understood and received by local communities who, despite not necessarily having a scientific knowledge of their surroundings, dwell and learn through their experience the nature of their relations to other beings. Nonetheless, it seemed more relevant to focus on the dispositif (and its sociology), formed by the conceptual and material arrangements oriented toward the evaluation of the compensations itself, and on the ways it related to the other actors that ought to be managed by it. This was thus a way to observe how its logic of action articulated with the other logics and how it could also be perceived from those other logics, in particular those relative to the dominant discourses and the milieux under control.

As I've finally decided to not focus on one compensation project only, one of the problems that I've encountered is how to include the variety of material recollected on projects of different types, in different areas and with different temporalities. This material goes from newspaper articles, media releases, reports and environmental assessments of the companies (including technical data, maps, etc.), documents produced by opponents of compensations or projects, technical, administrative or communication documents produced by the ANLA as well as ethnography of internal formal or informal meetings, meetings with the company, ethnography of visits of the project, interviews, among others. The problem was at the same time organizational, epistemological and methodological, and a decent amount of time has been spent trying to overcome it. In the end, while being crucial for my understanding of the nature of the process of design, evaluation and implementation and contestation of the compensations, a large part of the most detailed analyses about a variety of project wasn't included in this thesis.

I present in continuation the timeline of the making of the present dissertation and of the activities that accompanied it, and then describe the variety of fieldwork activities that have been carried out, present the nature of the interviews undertaken and the softwares used for the analysis of the textual material recollected.

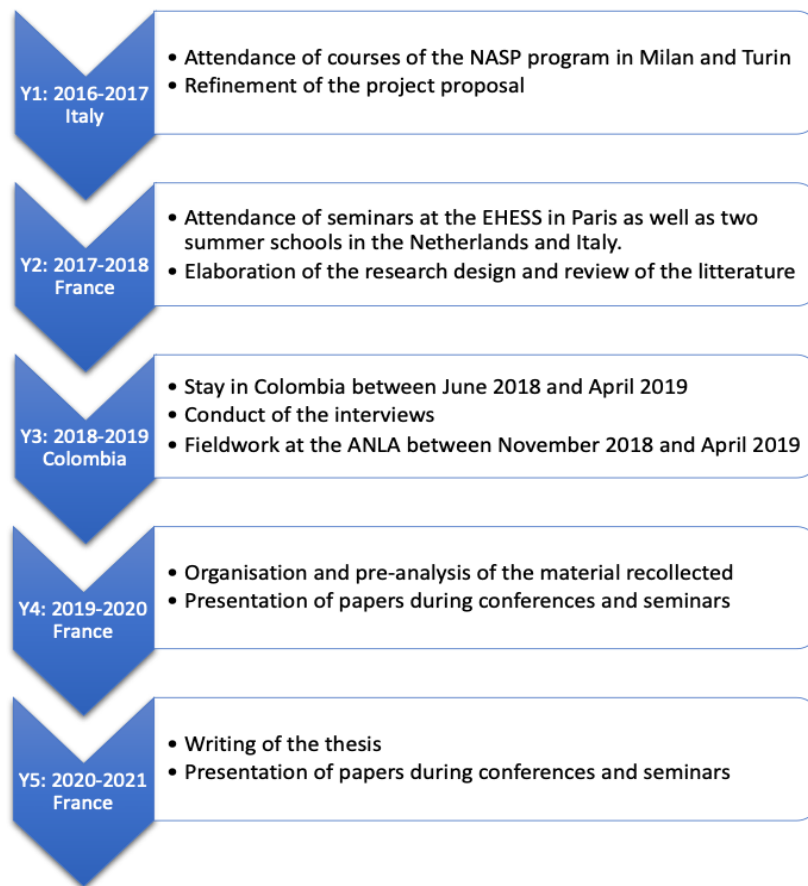


Figure 1: Timeline of the main activities undertaken during the course of the five years of the PhD.

a) Fieldwork activities

FIELDWORK AT THE NATIONAL AUTHORITY OF ENVIRONMENTAL LICENCES (ANLA)

Activities related to the ANLA before starting the “internship”:

- One formal meeting with the head of the compensations group
- One interview (3 hours) with a specialist of the compensation group
- One formal meeting with the whole group of compensation
- Observation of the public presentation of the ANLA’s yearly report of activities for accountability

Interviews

I did fifteen interviews with employees of the ANLA: five with members of the compensations group, three with members of an evaluation team (a “biotic”, a “social” and a “physical” specialist), one with a person from the communication department, a high profile consultant (who was also the “tutor” of my “internship”), a coordinator of energy projects and specialists who worked on a project of interest.

Revision of documents

I was able to access, read and save a number of documents from the online and physical archives, including Environmental Impact Assessments (EIAs) registered by companies, Compensation Plans, reports

Introduction

of visits on the field from the ANLA, evaluations from the ANLA of the EIAs and Compensation Plans, exchange of letters between the ANLA and the companies, third parties' correspondence, and other relevant documents included in the files of various projects.

Public Audiences

I had the opportunity to assist in person to one public audience (a meeting, moderated by the ANLA but organized and paid for by the company, where the concerned public can express their opinion and analysis of the project) concerning a project of electric line near Bogota, as well as to consult reports and videos of past audiences of other projects.

Formal and informal internal meetings

I have been assisting to a large number of meetings of different kinds, including discussions about specific projects, regular and informal meetings of the group working specifically on compensations, internal capacitation meetings on compensations and on public participation, meeting of preparation, briefing or debriefing of field visits, etc.

Meetings with "users" (typically companies but also anyone who requests a meeting with the ANLA)

Observation of about a dozen meetings with companies who come to present their project, their compensation plan or to ask for specific advice, as well as meetings with other actors, including national parks administrators, consulting companies, third party actors with specific interest (cattle raising association, mayors), among others.

Meetings of "request of additional information" (by the ANLA to the companies)

Observation of the preparation of those meetings as well as four of the meetings themselves, for different types of projects.

Daily life observations

I had the opportunity to observe at length the work in the offices, how people work and relate and in particular I've able to observe the specific work done by some people of the group working on compensation as they were analyzing the compensations plans that had been submitted by companies.

Visits of projects

I've been four times to project sites with the teams of the ANLA, each with a duration of two to four days, sometimes staying by myself in the region a more days to meet relevant actors:

- one visit of evaluation of a project of coal mine. As I arrived three days before, I used this time to get to know and make interviews (four) with relevant people impacted by a close-by mine of nickel.
- one follow-up visit of an oil field, including the visit to old compensation fields.
- one follow-up visit of a highway, including the visit of the future compensation area and a recently-planted compensation area.

Introduction

- one visit for a workshop with the community impacted by a hydroelectric dam. All those visits lead to the observation of various meetings and work on the field. I stayed eight more days to get to know the dam and make a number of interviews with the community and the company as well as to visit the compensation.

Note on the quotations of meeting discussions

While all quotations of interviews are transcriptions as accurate as possible, quotations of intervention during meetings or informal settings may relate to field-notes taken in the moment and, in the absence of recording, may not be absolutely accurate in the phrasing, although the meaning ought to be as close as possible to what was said.

OTHER ACTIVITIES IN COLOMBIA

Interviews

Apart from the interviews I did with people of the ANLA I did thirty three other interviews with people of various profile in two main categories:

- people working or who worked on the issue of compensation: people from the public sector (ministry, research institutes), NGOs (The Nature Conservancy, World Conservation Society,) and from the private sector (companies, bank of habitat, ...)
- people impacted by projects or activists supporting them: people impacted by the Cerro Matoso mine, the Quimbo hydroelectric project, the representative of an association of lawyer, of an association of defence of the rights of people impacted by hydroelectric projects, and others.

Documentary recollection

I aimed to gather a large variety of documents about biodiversity, compensations or about relevant case-studies from a wide variety of actors. I've recollected newspapers' articles, documents from NGOs, laws and reports of discussions in the senate, documents from the environment ministry and public institution, documents from companies, among others.

Observation of workshops on compensation

- Workshop on the development of indicators to evaluate the effectivity of compensations, organised by the Humboldt Institute and The Nature Conservancy.
- Workshop to develop the relationships between the Reserves of Civil Society and companies who are looking for area to implement compensation schemes, organised by the National Association of Colombian Businessmen (ANDI).

Participation to events, talks and conferences

Conferences on biodiversity, fracking, deforestation, oil spills, indigenous resistance, art and ecology, among others.

Observation of the National Meeting of Rios Vivos in Barrancabermeja

Three days during which people impacted by hydroelectric dams from diverse regions of Colombia members of the association Rios Vivos gathered in the city of Barrancabermeja, Santander to exchange their experiences and to strengthen their movement.

Observation of the visit of a group of Inga indigenous from Caqueta department in the Cauca

This visit of a group of twelve Inga indigenous in the Cauca of a duration of one week was organised by the NGO Amazon Conservation Team as a sharing and learning exchange between Inga, Misak and Nasa indigenous communities. I volunteered to accompany it so to document it and to be able to learn about the respective challenges of the visiting and visited communities.

FIELDWORK AT THE IPBES 7TH PLENARY

I observed the 7th Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services which took place in the building of the UNESCO's headquarters in Paris between Monday, 29 April 2019 and Saturday, 04 May 2019. I recount in details the rationale behind this additional fieldwork as well as the way I got access and my activities during this week in Section 2.3.

OTHER OBSERVATIONS

Online BBOP seminars

The Business and Biodiversity Offsets Programme (BBOP), which led the push for the implementation of biodiversity offsets worldwide, organised monthly seminars up until 2018, often discussing particular case-study. I attended to learn about the ways compensations were implemented but also to see how the compensations were discussed on one hand and how the community of practice that the BBOP intended to foster was organising and what they were focusing on on the other.

CDC biodiversity events

I also attended to various events organised in Paris by the Mission Économie de la Biodiversité of the Caisse des Depots et Consignations during the years 2018-2021. This public organisation aim at fostering public-private partnership to change the ways companies address biodiversity issues through participating in the Global Partnership for Business and Biodiversity as well as leading the Business for Positive Biodiversity Club which delayed among other things the Global Biodiversity Score for measuring the biodiversity footprint of companies. These presentations were therefore the opportunity to observe the intended development of new instruments for te use of companies.

IUCN 2020 Congress

Initially planned for the year 2020, the World Conservation Congress 2020 of the International Union for Conservation of Nature (IUCN) took place from 3 to 11 September 2021 in Marseille, France, and I've been able to attend it during four days. This congress, which reunites both members of the IUCN, civil society

organisations and companies, allows to observe jointly the themes that are currently put forward as being the most critical for the ‘conservation of nature’ and how those challenges are addressed by the different organisations present.

b) Interviews

As described, a large part of my fieldwork consisted in making interviews with relevant actors. The vast majority was done in the offices of the persons interviewed by other have been done in public settings like cafes or over the phone. They have all been recorded and then transcribed.

The interviews with professionals followed the interview guide that I had designed and reproduced in Annex. They usually started by asking the interviewee about their personal situation, including their employment trajectory and their interest in their current work. Before jumping into the compensations themselves or any particular detail, I first wanted to know how the interviewee was seeing the Colombian biodiversity and its current state, what it meant or them, how they were perceiving its transformations on the field as well as of the biodiversity policies, and finally how they were perceiving its importance and the preoccupations they had in relation to whatever the biodiversity related to for them.

The interviews continued by centering on the compensations for biodiversity loss, starting by the design and evolution of the Manuals of Compensation, including the actors, motivations, context, content, concepts and relation with previous types of compensation. Another part was then revolved around more technical aspects, including conceptual and implementation challenges, problems of data management, categorisation and mapping. Following that, I tried to discuss through different approaches how the interviewees understood the relations between what they described as being the biodiversity, the emergence of the compensations and their technical aspects, in particular with regard to the concepts of sustainable use and sustainable development, but also by asking them about the meaning that the compensations and that compensating had for them, in particular in relation to the impacts that they were said to compensate.

Finally, the last part (which was also often emerging by itself in the other parts) focused on specific examples of compensation which the interviewee encountered, knew about or struggled with, in particular with regard to the difficulties, incomprehensions and failures, but also what they were considering to be good examples. In the cases it was relevant, the interviews also focused in good parts on particular projects which the experts had been working on, either as a company, consultant or evaluator from the environmental authority.

The following Table 1 lists the interviews carried out as part of my fieldwork, including their date, location, the institution or company the interviewee pertains to if applicable, as well as their profession or situation. At least ten interviews have actually been done in two parts in two different occasions, since the first encounter wasn't sufficient to cover all the subjects that were intended to be discussed, and that the interviewee couldn't spare more time the day we first met. The table thus only indicates the date of the first meeting. The interviews had a duration ranging between half an hour to three hours. Although no participant explicitly requested it to me, I've chosen to anonymize them by attributing a code to each of them and using these codes as reference of the quotes.

Introduction

Table 1: List of the interviews conducted for the present thesis along with the codes referring to them.

Interview number	Date	Interview code	Location	Institution	Profession / Situation
1	19/07/2018	Humboldt1	Bogota	Humboldt Institute	Biologist, compensation expert
2	01/08/2018	ANLA1	Bogota	ANLA	"Biotic" expert
3	02/08/2018	Independent1	telephone	Independent	Restoration expert
4	08/08/2018	MADS1	Bogota	ex-MADS	Biodiversity expert
5	08/08/2018	TNC1	Bogota	TNC	Compensation expert
6	10/08/2018	TNC2	Bogota	ex-TNC	Compensation expert
7	10/08/2018	MADS2	Bogota	ex-MADS	Compensation expert
8	04/09/2018	CONSUL1	Bogota	Environmental Consultancy	Compensation expert
9	11/10/2018	Independent2	telephone	Independent	Compensation expert
10	20/10/2018	TNC3	Bogota	TNC	Compensation expert
11	20/10/2018	WCS1	Bogota	WCS	Compensation expert
12	14/11/2018	ANLA2	Bogota	ANLA	"Biotic" experts
13	18/11/2018	LI1	Montelíbano, Córdoba		Local inhabitant near the Cerro Matoso mine
14	18/11/2018	LI2	Montelíbano, Córdoba		Local inhabitant near the Cerro Matoso mine
15	18/11/2018	LI3	Montelíbano, Córdoba		Local inhabitant near the Cerro Matoso mine
16	18/11/2018	LI4	Montelíbano, Córdoba		Local inhabitants near the Cerro Matoso mine
17	23/11/2018	ANDI1	Bogota	ANDI	Compensation expert
18	23/11/2018	Humboldt2	Bogota	Humboldt Institute	Compensation expert
19	28/11/2018	ANLA3	Bogota	ANLA	Manager
20	30/11/2018	ANLA4	Bogota	ANLA	Social' and 'Physical' experts
21	08/12/2018	LI5	Garzon, Huila		Local inhabitant near the Quimbo dam
22	09/12/2018	LI6	Garzon, Huila		Local inhabitants near the Quimbo dam
23	11/12/2018	NGO1	Garzon, Huila	NGO	
24	12/12/2018	LI7	Garzon, Huila		Local inhabitant near the Quimbo dam
25	12/12/2018	LI8	Garzon, Huila		Local inhabitant near the Quimbo dam
26	13/12/2018		Garzon, Huila	Hydroelectric company (Emgesa)	Biodiversity compensation expert
27	13/12/2018		Garzon, Huila	Hydroelectric company (Emgesa)	Social compensation experts
28	14/12/2018	LoGov1	Neiva, Huila	Local government	
29	14/12/2018	Asoquimbo1	Neiva, Huila	Asoquimbo	Activist
30	21/12/2018	ANLA7	Bogota	ANLA	"Social" expert
31	11/01/2019	ANLA5	telephone	ex-ANLA	"Biotic" expert
32	18/01/2019	Colciencias1	Bogota	Colciencias	Biodiversity expert
33	23/01/2019	ANLA6	Bogota	ANLA	"Biotic" expert
34	29/01/2019	MiningComp1	telephone	Mining company (Sator)	Sustainability expert
35	29/01/2019	ANLA8	Bogota	ANLA	"Physical" expert
36	04/02/2019	ANLA9	Bogota	ANLA	Compensation expert

Interview number	Date	Interview code	Location	Institution	Profession / Situation
37	06/02/2019	RiosVivos1	telephone	Rios Vivos	Activist
38	07/02/2019	TNC	Bogota	TNC	Compensation expert
39	08/02/2019	CONSUL2	telephone	Environmental Consultancy	Biodiversity expert
40	15/02/2019	MiningComp2	Bogota	Mining company (Drummond)	Sustainability expert
41	21/02/2019	RiosVivos2	Bogota	Rios Vivos	Lawyer
42	26/02/2019	ANLA10	Bogota	ANLA	Biodiversity expert
43	03/05/2019	ANLA11	Bogota	ANLA	Compensation expert
44	14/03/2019	ANLA12	Bogota	ANLA	Compensation expert
45	27/03/2019	ANLA13	Bogota	ANLA	Communication
46	29/03/2019	ANLA14	Bogota	ANLA	Compensation expert
47	22/04/2019	ANLA15	Bogota	ANLA	Senior manager

c) Softwares used for the analysis

PROSPERO

In addition to my direct observations and interviews, I used the software Prospero⁶ to analyse corpuses of texts from a diversity of sources. Prospero has been developed continuously by Francis Chateauraynaud and Jean-Pierre Charriau since 1995, and is particularly useful for to study and compare the various forms of argumentation used by the actors as well as for visualizing the narrative registers as networks, so to understand their dynamics and circulation as well as the conflictual positions.

I constituted a number of corpuses of documents to be used in Prospero. The first corpus contains the major global biodiversity assessments of the last decades in English, which served for the first two Chapters so to better understand and describe the transformations of the way the environment and the biodiversity were assessed in relation to human activities. The other corpuses are in Spanish. One contains articles on biodiversity of the last 20 years from the main Colombian newspapers, with little selectivity. It has been used in order to understand how have evolved the qualifications of biodiversity and its relations to humans, to see whether the emergence of biodiversity offsets changed the general understanding of biodiversity or its modes of valuation by the newspapers, and then to compare with the qualifications and attributes given to the biodiversity that is considered in the articles talking more specifically about compensation. Another corpus consists of the Colombian environmental laws as well as a number of reports on biodiversity and compensations in Colombia. A fourth corpus has been composed of press release and corporate and institutional news articles about compensations. I also considered the opportunity of building another corpus with some more technical documents (including for example compensation plans and their analysis by the ANLA), but decided not to do it.

After building these corpuses, I've worked on the construction of new analytical categories and "fictional entities", which regroup the various appellations of a given entity or actant, so to adapt the dictionaries that have been shared with me. Those dictionaries were more oriented toward the topic of alerts and violence, and therefore the categories and fictional entities related with environmental issues were generally too broad or

⁶ <http://Prosperologie.org/>

included in larger entities. The categorisation of the terms related to the science of ecology and the other technical terms was thus related to a decision regarding the desired level of details.

I've encountered with the analysis of the corpuses issues which didn't allow me to fully take advantage of the possibilities offered by the software 1) how to make the rest of my material as well as my research questions dialogue with what Prospero can help me to understand, 2) how to attach a meaning to what can be found out in Prospero and give it weight in the argumentation of my thesis, and 3) the place that the use of Prospero as well as the tables, figures, networks, etc, that can be produced with it should occupy within the thesis. In the end, its use was mostly exploratory, that is that it helped me get an overview of the reconfigurations of the issues of biodiversity management and of the actors talking and commenting the compensations.

Finally, I also considered to use Prospero for the analysis of the interviews, but the fact that the transcriptions also included my own comments and questions, and that numerous sentences, since they were the reflection of oral speeches, were too long and enough clearly cut so to allow the software to work without creating issues which would have taken too long to solve.

ATLAS.TI

To facilitate the analysis of the interviews, I've therefore chosen to use instead the CAQDAS software ATLAS.ti. After having imported the interviews, I used it to put them in categories and to code them, that is to read them and to assign specific codes relevant to me to specific parts of the text. It was then useful to see the type of codes that were arising (but which were not made by following the grounded theory, since the codes were both connected to what I intended to talk about in the interviews and to what was interesting me in the transcribed interviews themselves. Thus the codes were simply thematic and were used thereafter to retrieve all the interviews parts which had the same code, so to then analyse them in a second phase outside the software.

BIBLIOMETRIX

Two softwares have been used in particular for the biodiversity offsets literature analysis presented in Chapter 3: Bibliometrix and Gargantext.

Bibliometrix⁷ (Aria and Cuccurullo 2017) is a package for the statistical computing software R⁸ which allows to perform bibliometric analyses. It allows the importation of corpuses exported from the scientific paper databases Scopus⁹ and Web of Science¹⁰. I used Bibliometrix through its user-friendly web interface biblioshiny¹¹, which greatly simplifies the importation and analysis of corpuses. It provides a number of metrics to qualify the sources, authors and citation of documents as well as allows to analyse what their conceptual structure, for example through network analysis or topic modelling of the content of the abstracts of the papers, the intellectual structure, by doing a network analysis of the citations and co-citations attached as metadata to the paper when exported from the database, and the social structure, through the making of collaboration networks based on co-authorship, institutions and journals.

⁷ <https://bibliometrix.org/>

⁸ <https://www.r-project.org/>

⁹ <https://www.scopus.com/>

¹⁰ <http://www.webofknowledge.com/>

¹¹ <https://bibliometrix.org/Biblioshiny.html>

GARGANTEXT

Gargantext¹² is a web platform developed by David Chavalarias and Alexandre Delanoë at the Complex Systems Institute of Paris Île-de-France (ISC-PIF-CNRS). It serves for the analysis of unstructured text documents by combining natural language processing, text-mining, complex networks analysis. It also support the importation of corpuses exported from Scopus. Once the corpus has ben built, it proposes statistically relevant expressions and offers the researcher to keep some that are considered to be actually relevant for the purpose of the research and remove the unrelevant ones. The set of expressions thus constructed is then used to produce maps which represent the corpus in the form of a graph using the selected expressions as nodes while links strengths are proximity parameters set according to the calculated proximity between expressions. Tools for the spatialisation of the graph allow to represent and visualize clusters and their relations.

d) Note on the vocabulary and the text

The actors use the words of nature, environment, biodiversity and many others to render tangible, characterize and communicate the world and its irreducible properties, with attention to anything that is *alive* or related in any way to life. Those words are, as we will see, highly dependents on the diverse contexts of their use but, even in a given context, their meaning is never fully predictable or understandable (likely for the speaker as well in many cases). Their meaning varies, evolve and get reconfigured through the practice, intentionally or not. This renders the context of their use crucial and absolutely doesn't imply that they could mean anything. Living in the same world as the actors I'm proposing to observe and describe, it would be impractical as well as wrong to pretend to use more 'objective' words than these or to use them only according to a definition that I would have been inspired to elect among those encountered during my inquiry. I will therefore use them to relate to the concepts, in all their beautiful and varying imprecision, by using the same words as those of the actors when I describe their interactions and arguments. In particular I often use the term biodiversity despite its fuzziness, as Chapter 1 will show, because it is the term that actors that actors use and that is the object of the studied policies, and because it allows to unpack what is meant in a particular situation, or on the contrary to leave it undefined when it is less relevant. Distinctively, the term of 'milieu' that is employed in this thesis is barely used by actors but is used in the continuation of Berque (1987) as well as Chateauraynaud and Debaz (2017) to avoid not only the distinction between nature and culture but also to put at a distance the idea of a perfectly objectifiable environment. Indeed, the use of the concept of milieu engages a phenomenology and therefore highlights how are produced the grasps over the elements of the environment that are described. The milieux in which human and more-than-human beings live are then forged by a continuous back and forth between percepts, affects and precepts.

To make the text a little bit lighter and less repetitive, the terms 'compensation(s)', 'offset(s)' or 'offsetting' all equally refer to the broad concept of 'biodiversity offsets' except when mentioned otherwise.

I'll also often refer to what is at the origin of the environmental compensation as 'projects' instead of systematically recall that they are not necessarily projects (sometimes called development projects) but can also be a variety of works and activities, as it is time and time again found in documents talking about

¹² <https://gargantext.org/>

Introduction

compensation, for example in the long form of “compensations for the impacts of projects of development, works or activities that could not be avoided, mitigated or prevented”.

I also make use of the gender-neutral pronouns ‘they/them/themself’ so that actors are not referred to as male or female when it isn’t relevant, and in particular for the people which name isn’t mentioned. Indeed, their quality of male and female wasn’t taken into account in the analysis that I’ve made, and referring to them as ‘he/him’ or ‘she/her’ could let imagine that their behaviours, activities or opinion relate to their gender while no element presented here actually allows to understand how the gender and gender relations influence them. Moreover, in some cases using a non-gender-neutral pronoun would have threatened the anonymity of the persons referred to.

Some of the documents and literature quoted in this thesis are originally in English, but another large part was also in French as well as in Spanish, in particular with regard to the interviews. All the text in French and Spanish present in the main body of the text has been translated to English by myself, and the translations are marked with an asterisk. But, the quotes of interviews presented in quotation blocks have been left in Spanish: not only their translation would have been to time-consuming, but it would have been difficult to correctly render their meaning. Nonetheless, they are systematically introduced and analysed in ways which allow the reader to follow the argument regardless of whether the quotes were read or not. Their presence remains essential as supports for the demonstration as well as for showing how the actors interviewed articulate the issues discussed in their own way and with their own words, which also sometimes reveal their emotional and sensitive involvement in the situations in ways that are not always captured by my commentaries. The same argument could be made for the quotes within the main body of the text but, to avoid having sentences comprising multiple languages, those extracts have been translated anyway. Finally, the great place given to excerpt of documents and interviews, to ethnographic descriptions and their contextualization, as well as accounts of exchanges between actors (in particular during the IPBES Plenary), is what largely explains the length of this dissertation. Again, they may be considered to not always be indispensable for the formal arguments that are made, but they provide a richness which can nowadays only find its place in the format still allowed by a thesis which can still hope to escape the constraints of modern efficiency which are more and more imposed on all academic work. Nonetheless, readers who wish to do so could very well skip the lengthiest descriptive passages or interview excerpts.

Another reason for the length of this thesis has to do with the effort of unfolding the circulations and transformations of knowledges and modes of valuation among and between a diversity of contexts. Indeed, while I could have focused only to the analysis of what has strictly to do with the development of offsets in Colombia, this wouldn’t have, in my opinion, allowed understanding it in the wider context of transformation of the description and knowledge about the environment, and the relation between the global discussion on biodiversity and the efforts made by actors to develop offsets in other countries and in international institutions, as well as to link the critic of offset made in various places. Thus, while the content of first three chapters was not initially planned to have its current extension, it was ultimately arbitrated that its development was an appropriate and meaningful contribution to the overall argument presented in this thesis.

CHAPTER 1

Biodiversity between knowledge and ethics

1.1 Introduction

When studying biodiversity offsetting, numerous challenges come from the concept of compensation, as well as from its definition and its legal, technical and practical implementation. On the other hand, it is also fundamental to understand first what is considered that should be compensated and that is thus cared about, here referred to as “biodiversity”, and why it is considered that it actually matters. But, before focusing on the “offsetting” part and circumscribe the particular type of “biodiversity” that “biodiversity offsets” are relating to, this chapter will first look for a few hints at what biodiversity may be independently of the compensations. It will focus in particular on its history and the tensions in which it is caught, and how the understanding of what it is travels and changes according to the different milieux and situations in which it is used and to the actors who reclaim its meaning.

The second part will then look at the relations between the concept of biodiversity, understood as a concept which originated in the scientific arena but quickly had a very rich social life, and ethical preoccupations. Indeed, one of the main troubles with biodiversity with which users of the term are likely to have to stay with, following the expression of the philosopher Donna Haraway (2016), is the determining of the relations and positions that human beings are considered to have with it, whether as a concept or a reality ranging from the global to the corporeal. While the question is often approached in terms of values, I will shift the focus to issues of valuation and the impacts that considering biodiversity as a specific form of knowledge may have on them. More generally, I will then give an overview of some links between aspects of knowledge and ethical judgements, and describe some of the ways through which those links are transformed.

1.2 Social history of an ambiguous natural concept

While the history of the word biodiversity has been recalled and analysed by an extremely large number of authors, it is important to restate it in order to understand the subsequent dynamics of its uses and the numerous consequences that had its appropriation in a variety of spheres. Originally being just a short version

of biological diversity, the concept of biodiversity “was apparently coined by Walter G. Rosen in 1985 for the first planning meeting of the 'National Forum on Biodiversity' held in the city of Washington, USA, in September 1986, the proceedings of which brought the notion of biodiversity to the attention of a wide field of scientists and others” (Heywood 1995). While the concept of biological diversity was only referring to the genetic diversity and the ecological diversity in terms of species, the concept of biodiversity almost immediately included the diversity of ecosystems as well, and definitions later included even the diversity of human cultures. For Guyer and Richards (1996, cited by Büscher (2013)) the term was from the beginning as much political as it was biological, and Edward O. Wilson, who wrote the proceedings of the conference which rendered biodiversity famous, used the term to protect its academic interest in the study of whole organisms against the emergence of molecular biology. But he was himself quickly overtaken by the interpretations of his colleagues who understood that biodiversity was also describing the dynamic interaction of its components over time (Takacs 1996).

1.2.1 A fuzzy concept...

Beyond its limited use during the first years, the term biodiversity then had such a success that an ever-growing number of groups and publics started to use it their own way. Its definitions and meanings multiplied and separated from its ‘original’ intended ecological meaning, being considered anywhere from a well-defined scientific concept to the “living tissue of the planet”, as another word for ‘wilderness’, ‘nature’, the plants and animals (often with one particular species used as exemplification), or even a synonym of life itself. It has also become the main object of conservation actions and policies. There are now numerous (compatible or competing) definitions of what the term biodiversity mean or encompasses, and many ways to understand them, depending on the context, the actors involved, their respective interests, representations and political objectives (Lanzerath 2014). While many publications refer themselves to the authoritative definition agreed upon during the Convention on Biological Diversity (CBD) in 1992, many others allow themselves to create variations and, even in the international institutions, the definitions of what biodiversity is vary and evolve.

According to the text o the CBD, “‘Biological diversity’ means the variability among living organisms from all sources, including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems”. In the Global Biodiversity Assessment (Heywood 1995) “biodiversity is defined as the total diversity and variability of living things and of the systems of which they are a part”. The IPBES adopted a slightly more complex definition by the inclusion of new types of variation as well as the introduction of variation “over time and space”: “The variability among living organisms from all sources including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part. This includes variation in genetic, phenotypic, phylogenetic, and functional attributes, as well as changes in abundance and distribution over time and space within and among species, biological communities and ecosystems¹³.”

¹³ IPBES Glossary, entry “Biodiversity”.
<https://ipbes.net/glossary/biodiversity>, consulted on Sept. 7th 2020.

Not trying to hide the troubles that emerged with the already numerous definitions, the authors of the 1995 Global Biodiversity Assessment described that the concept of biodiversity changes of nature depending on its use:

Strictly speaking the word biodiversity refers to the quality, range or extent of differences between the biological entities in a given set. In total it would thus be the diversity of all life and is a characteristic or property of nature, not an entity or a resource. But the word has also come to be used in a looser fashion for the set of diverse organisms themselves, i.e. not the diversity of all life on earth, but all life itself. In some contexts the usages are distinct, in others there is ambiguity. 'A biodiverse ecosystem', or 'the generation of biodiversity in rain forests' clearly refer to the quality or range of diversity. 'Who owns the biodiversity of the forest?', 'Let us list the biodiversity present in this one ecosystem' are in contrast references to the forms that exist, albeit in a diverse system, rather than the actual diversity among them. (Heywood 1995)

Following that, they also contended that not only the meaning of 'biodiversity' was changing according to its specific use in a sentence, but also depending on the perspective of the person or group who was using it, depending on the country where they live, on whether they were rural or urban, or on their profession. For example, they wrote, "the scientist studying the maintenance of biodiversity in ecosystems may focus on processes which maintain the variety of organisms, regardless of which ones they are. By contrast, a lawyer establishing legal rights over the biodiversity of a national park may be thinking purely of the set of objects, the plants, animals or microbes, and very definitely which ones they are, rather than the variation between them" (Heywood 1995).

The controversy around the definition of biodiversity that is still visible today was therefore already fully acknowledged in the Global Biodiversity Assessment, but instead of lamenting it they argued of the benefits that the fuzziness of the concept provides:

While the imprecision of definition and diversity of perception are sometimes viewed as a weakness of the concept of biodiversity, they can also be considered a strength in making biodiversity a unifying concept, bringing together people from different disciplines and interests with a common goal - the understanding, conservation and wise use of biological diversity and resources. (Heywood 1995)

Nonetheless, and as we will see, while it may serve as a basis for discussion, the different understandings of what biodiversity is or should be and the dissymmetrical possibilities to influence its meanings is also the source of recurrent tensions, especially between groups who favour specific scales of reasoning over others, and whose views on the agreeability and fungibility of biodiversity elements largely differs.

1.2.2 ... whose scientificity remains unreachable

In any case, beyond the definitions, interpretations of its substance, significance and consequences vary even more widely and keep evolving. Even its scientificity is considered at least "questionable" (Delord 2018), since its meaning "varies depending on the scientific discipline in which it is used, the angle of journal article, the ethical approach or the political strategy" (Lanzerath 2014). Talking from a political ecology perspective of the disagreements, Büscher considers that "we can arguably distinguish between several, interrelated types of contention. The first have to do with defining the concept itself. The second relate to the use and purpose of the concept, while the third and last are about who can speak for biodiversity" (Büscher 2013).

Not only the definitions vary, but ecologists themselves often admit that the concepts used in most definitions are not always clear, and that lack of consensus may become clearly problematic when it is time to classify, quantify or compare them. Characterizing biodiversity consists in an immense epistemological challenge, in which scientists multiply their propositions, discussing the accuracy of the description they allow and their heuristics properties. Some might gain precedence and successfully become a temporary "obligatory crossing point" (Latour:1991ttPoint de passage obligé, PPO, Callon 1986) in the discussions concerning biodiversity.

To take only one example among other difficulties, the concept of species, despite its seemingly intuitive existence, was one of the most discussed from the beginning of the use of term biodiversity as the object of global assessments, and in particular in the first of its kind, which is the Global Biodiversity Assessment produced by the United Nations Environment Programme (UNEP) and launched in 1995. As expressed in the report, despite "its universal usage as a basic unit of taxonomy, it is difficult to agree on an exact definition of what constitutes a species. As a result there is considerable variation in concept and usage which may be reflected in differing classifications and species totals" (Heywood 1995). Listing and describing the actually numerous concepts of species, respectively based on criteria of morphology, biology, intra-species recognition, cohesion, ecology or evolution, they consider that none of them is free from criticism. The authors of the assessment, on a now unusual familiar tone, nonetheless declared with resignation that "one can argue that for the whole of species diversity to be built on such an uncertain unit as the species is very unsatisfactory. It is, however, the best: the only unit that we have!". The assessment also listed a number of other critical conceptual and methodological issues, among which the facts that "all existing global classifications of ecological systems are to some extent inadequate, either in their methodology or in their spatial coverage, or in both", and that "a serious limitation on all measures of species diversity in an ecosystem is our inability to survey all organisms at any site: only a few taxonomic groups are sufficiently known for complete field surveys to be made".

In the preface of the collective book *La biodiversité en question* (Casetta and Delord 2018), Jean Gayon gathers the findings of the contributions of the diverse chapters' authors to consider that "the scientific issue is undoubtedly the most delicate. There is no consensus on the content of the concept of biodiversity, nor on its measurement"* (Gayon 2018). He notes a number of hesitations on the different levels of description of diversity (whereas they are the genes, the species, the ecosystems or even the landscape), revealing the centrality of the question of scales, and of their relations, with regard to the nature and dynamics of biodiversity¹⁴. He also analyses that some researchers "insist on the specific level, because it is the one where measurements are easiest, the one that is undoubtedly the most important from the point of view of evolutionary processes and effects, and also the one, according to the authors, that provides the most verifiable benchmarks for the managerial and political debate on biodiversity"* , while some other authors, coming from the field of ecology, "emphasize the ecological level, and stress the scientific and managerial importance"* of other notions linked to a functionalist point of view. But the issue and dissents among authors also concern what type of diversity ought to actually be described and possibly measured and compared, and the historical transformation of the field of ecology: "should we measure the number of species (in a given space), the variety of composition, the complexity (interaction networks), the stability or, on the contrary, the evolvability (or capacity to evolve)?"*. Patrick Blandin describes the transformations of the concept of diversity and the wide

¹⁴ The question of scales is further discussed, in particular with relation to the assessment of impacts of projects on biodiversity, in Chapter 8.

variety of uses as well as the relative importance each take according to different ecologists, and the strong debates that took and still takes place between them (Blandin 2014; 2018), while Sahota Sarkar expands even further the question by wondering if other characteristics might not matter even more when taking biodiversity into account when taking planning decisions (Sarkar 2005).

While the metrological debates, in particular in conservation and biodiversity offsetting, will be examined more fully later on, these comments already exemplify very well the situation of descriptions that find themselves having to be at the crossroads of an array of diverse context-dependent considerations and preoccupations, including their feasibility, their descriptive relevance and their usefulness in the arenas in which they are intended to generate meaningful discussion. In relation with biodiversity, the problem of measurement can be even more acute than with other objects, as it is inherent to what biodiversity is often used to express and that is the concept of life and its irreducibility.

For Norton, not only an “objective scientific definition” of biodiversity will never exist, but he even considered that there is an inverse relation between the increase of the understanding of biodiversity and the possibility of achieving an objective measure of it (Norton 1994). Yet, the understanding of the complexity of biodiversity might not be the only issue for adequate measuring, as measures are always dependent on the objective of the measure, and in the case of biodiversity it might depend on the values and the conservation priorities that have been set in a specific context (Sarkar 2005).

Insisting on all those existing issues on agreeing on what biodiversity is composed of and how to qualify it, put in order, classify and measure its components, is not to say that biodiversity is meaningless or that it doesn't have heuristic advantages or that it doesn't bear relations with the reality. But this relation may be more complex than what is advanced by positivists: indeed Toepfer affirms that biodiversity should be considered as a paradigmatic example of post-normal science, as defined by Funtowicz and Ravetz¹⁵, because “first, the investigation of biodiversity has to cope with uncertainties on the factual as well as the axiological or ethical level. We simply do not know enough about the amount and function of biological diversity; we do not know, for example, whether there are currently three or 100 million species of animals on earth, and we do not know how they contribute to the stability of our ecosystems. Second, we do not know how we should evaluate biodiversity: instrumentally or intrinsically. Third, stakes are high because we are currently facing a loss of biological species probably on the level of one of the five mass extinction events in earth history. Finally, decisions are urgent because this is an irreversible loss and we do not know whether there will be a tipping point when things get worse at an increased speed and scale” (Toepfer 2019).

But beyond the problem of defining biodiversity as a global issue or as a common good, numerous other difficulties emerge when trying to grasp it in a given place or context, due to the diverging ways in which it gets to be known and managed, and in particular by its constant redefinitions by the local experiences and by the interacting milieux and dispositifs (Chateauraynaud and Debaz 2017).

¹⁵ That is a scientific investigation in which “facts are uncertain, values in dispute, stakes high and decisions urgent” (Funtowicz and Ravetz 1993).

1.2.3 Biodiversity as a concerning tool

The variability and multiplicity of its definitions led a number of authors to look at the concept of biodiversity and dissect it in order to try to understand its many faces, claiming that “biodiversity has been defined in many ways, reflecting the diversity of those who speak about it”* (Blandin 2014). According to Christian Lévêque, biodiversity is also often described as “a portmanteau word, or a Spanish inn (*auberge espagnole*), where everyone brings what they would like to find there“ and in which “everyone projects their representations of nature according to their cultural background and their lived experience, but also in relation to their expectations and their immediate interests” (Lévêque 2018). In his article *Au leurre de la biodiversité ?*, Patrick Blandin wonders whether biodiversity is whether a new scientific paradigm or new clothes for old questions, as well as if it is an imposture or an invitation to inhabit the Earth differently (Blandin 2014). Responding to a provocative request by a journal, Andre Micoud tries for his part to answer whether “biodiversity is still natural” (Micoud 2005).

One of the most famous works on the history of the term is from David Takacs, who wrote in 1996 *The Idea of Biodiversity: Philosophies of Paradise*. In this book, he considered that “biodiversity shines with the gloss of scientific respectability, while underneath it is kaleidoscopic and all-encompassing: we can find in it what we want, and can justify many courses of action in its name” (Takacs 1996). Being more than a scientific object, it is also considered that biodiversity “emerged from a preoccupation, an issue, which goes beyond science”* (Devictor 2018a). But another author considered that this preoccupation might not only be for the biodiversity itself, and that the ecologists were not so selfless: “it is worth noting that from the very beginning, the use of ‘biodiversity’ was connected with politics and environmental technology rather than with the science itself. However, scientists tried to exploit the popularity of this term for their own sake-to get money to enable the continuation of their previous work” (Ghilarov 1996).

More generally and genuinely, biodiversity may also “expresses and embodies concern about the depletion of living resources and the degradation of their environment”* (Pavé 2019). Indeed, a number of authors expressed that a specific normativity is readily embedded in the notion, sometimes referred to as “the hybridization of descriptive and normative dimensions” (Toepfer 2019).

With the birth in 1978 of conservation biology as “a mission-driven discipline” (Meine, Soulé, and Noss 2006), the invention of biodiversity couldn’t be neutral, and the science of its conservation, conservation biodiversity, developed as an activist form of science whose goal was precisely to preserve biodiversity and to protect it. Similarly, if we return to the image of the ‘living tissue of the planet’, it becomes clear that the term in itself implies that protecting life also means protecting the diversity of life” (C. Larrère and R. Larrère 2011). As we will see later in this chapter, a “mission” of this type cannot only be driven by rationality and facts, neither for the researcher nor for those they may hope to convince to change. For the inventor of the word biodiversity, Walter G. Rosen (cited by Takacs and commented by Toepfer), “creating the term, he said, was “easy to do: all you do is to take the ‘logical’ out of ‘biological’”. (...) His aim was, as he said, to create room for “emotion” and “spirit”” (Toepfer 2019). While it seemed obvious even for those advocating for the scientificity of ‘biodiversity’ that the craft of the word had been done to ensure better communication, the seemingly unrelated removal of the reference to logic while aiming to enhance the emotional and spiritual (that is actually what stays of ‘biological’ without its logical part) was everything but coincidental. This

transformation made that some even wondered if it had acquired a “mythological status” (Ghilarov 1996), therefore providing a definition of the world and normative prescriptions that are attached to myths.

For the authors of the Global Biodiversity Assessment in 1995, the concept of biodiversity emerged at the crossroad of a knowledge and conceptual incompleteness in relation with a presumption of crisis of still undefined substance and contours:

Are we facing a global biodiversity crisis, or indeed are we in the midst of one, as several authors have suggested? These and similar questions have been asked during the past two decades (...). These concerns have been coupled with a realization that our knowledge of the diversity and variability of plants, animals, micro-organisms and the ecosystems in which they occur is woefully incomplete. It is this situation that led to the introduction of the notion of biological diversity - the total variability of life on Earth - which first emerged some fifteen years ago. (Heywood 1995)

For Patrick Blandin, “the invention of biodiversity came at the right time to revive the international nature conservation dynamic. (...) By appropriating the concept of biodiversity, IUCN found a new momentum, and perhaps a legitimacy that had been eroded in naturalist circles worried that it was more concerned with development than conservation”* (Blandin 2014). While it could have stayed relatively anecdotal, the term biodiversity has almost immediately been seen as an opportunity for renewing the discourse on nature conservation. Whether it is for gaining an advantage in an academic competition between disciplines, to establish and fund an emerging field of research, to help achieve the “mission” or to better communicate, the term biodiversity profoundly shifted the landscape of nature conservation, and carries along pressing normative statements.

In this regard, the notion of “invasive species” and the debates around it provides a striking example of the perturbations that emerge when such a strongly norm-oriented concept is taken for a purely objective science. Resonating with evidently troublesome social issues with heavy pasts, strong connotations and used for ongoing stigmatizations, the concepts of what is “invasive”, “native”, “exotic” or “alien” depends strongly on the evolving social definitions and are wholly context and scale dependent. Some argue that it may be a reason why, even for non-human “species”, qualifying some as being one or the other is the source of large dissensus between ecologists, in the scientific community, as well as within the rest of the public. The “natural” rejection of alienness in general among humans has been considered as an explanation for the unreasonable rejection of alien species, since invasions occurred in the past just as naturally (Brown and Sax 2004), authors insist on the scale of change induced by humans (Cassey et al. 2005) and a global consensus has been established to say that invasive species generally have a negative impact and are one of the biggest threats to biological diversity (IPBES 2019a), leading the IPBES to start working on a report specially dedicated to them.

In this context, a discursive cluster bomb was thrown into the field of conservation in 2017 by James C. Russell and Tim M. Blackburn with their article *The Rise of Invasive Species Denialism* (Russell and Blackburn 2017). This “denialism” is portrayed as advocating that invasive species are not good or bad, and may consist in occasional accusations that humans who are actually to blame divert their responsibility on invasive species and their supposedly malign behaviours. More importantly, they consider that “determining the negative impact of invasive alien species depends on both objective scientific evidence alongside subjective value definitions of impact. Disagreement over impacts, and hence classification of an alien species as an IAS [Invasive Alien Species], can thus arise from either differing interpretations of the evidence, or underlying

values. However, it might not always be clear which of these is the primary motivator for dissent". This paper generated a tornado of responses, in particular on the difference between denial and disagreement (see for example Crowley et al. 2017 on the relation to other types of "science denialism").

According to Munro et al. (2019), it would be a mistake to talk about denial when most of the misunderstanding comes from the definitions of invasive biology of its subjects "based on multiple subjective and normative judgments", and that a large part of the discipline is aimed at agreeing on shared values. For them, these values, and in particular the way of imposing them, are the object of the criticisms, while the accusers of denial would protect them by using the coverture of science. Continuing this reasoning, David M. Frank (2019) regrets the instrumentalisation of denialism to dismiss authors expressing "legitimate ethical concerns" and that while epistemic disagreements and discussions about them can be necessary within the scientific community "the case of invasion biology shows how non-epistemic or ethical disagreement within sciences, while carrying significant risks, can also be epistemically and non-epistemically valuable".

Problematically, the last authors, although displacing the controversy on the field of values, do not totally answer the concerns of Russell and Blackburn about what could be called from their point of view the 'post-truthisation of the field of invasive biology, and the weakening of its grip of political decisions due to the rise of contestations of its finding and its hegemonic value imposition. Some nonetheless recommend that them to be "more accepting of perspectives originating from other disciplines and more open to values-based critique" (Munro et al. 2019), while others see a confirmation that more social sciences are necessary in the biodiversity assessments (Jetzkowitz et al. 2017).

So, what can be the status of the word 'biodiversity'? As signalled by Isabelle Mauz, it has been successively qualified by various authors as being a notion, a concept, a paradigm, a norm or a narrative (Mauz 2008), while Casetta & Delord see it as a blurry "quasi-concept", and "an exploratory process" (Casetta and Delord 2018). André Micoud (2005) offered to reconcile some of those propositions by considering it as being multifaceted. Analysing it through the three types of 'understandings' described by medieval philosophy and then used by Charles S. Peirce in its sign theory, "namely: the intelligence of sensible things, the intelligence of rational things and the intelligence of mystical things"* , he considered 'biodiversity' as being both a percept, a concept and a precept.

According to Micoud, it is first a percept because it has an effect on the imaginary, the feelings and touch its audience insofar as they are sensitive beings. It therefore also transforms what we perceive as being 'nature' now replaced by 'biodiversity', transforming its ontological properties and the grasp we may have of our milieu, so to make visible and orient the attention to other elements, scales and relations. The second aspect speaks to the reasoning beings, articulating scales, properties and indicators, giving meaning to observations while opening a space within which controversies among actors with varying legitimacy can develop. The third dimension relates to the understanding of the mystical, which Micoud relates to what is now called "symbolic entities" or "juridical fictions". This dimension is the one that articulates what has been described as being the biodiversity and how it is, its state, with the moral obligations that humans may have toward it. The reverence which it is then advisable to show toward it can thus sometimes be expressed by the capitalization of its first letter, conferring to 'Biodiversity' the status of moral or transcendental being.

The preceptual aspect of biodiversity is confirmed by Takacs when he affirms that "the term biodiversity makes concrete - and promotes action on behalf of a way of being, a way of thinking, a way of feeling, and

way of perceiving the world”, it is “subjective preferences packaged with hard facts” (Takacs 1996). This statement, although showing interestingly the intertwining of the descriptive and evocative power of biodiversity, seem to portray a concept which directly embeds all those aspects but problematically puts aside the need for its promoters to constantly make the connections that may sometimes appear intrinsic to the notion. What is supposed to be the intrinsic norms and values carried by the term biodiversity has in reality to be always (re)constructed, communicated and reaffirmed by the various actors, with the goal of naturalizing them, even if various groups may actually not agree on what they are.

Considering the aim and standpoint of my research, what is even more important than considering that biodiversity covers three types of intelligence or understanding, as Micoud describes, is to take as postulates the following: the specificities of those types and of their relations are not fixed; they are inseparable, like the sides of a coin; their articulation has a defining importance; and they can only evolve jointly. Thus, every redefinition by an actor regarding an either perceptual, conceptual or preceptual characteristic of biodiversity also implies an implicit or explicit articulation with the other ones, which become dimensions of a wider understanding. But saying that the joint transformations are necessary is not saying that they are determined or mechanical. Quite the opposite, the direction of those may actually lead to controversies, as the relations between the dimensions of understanding can become wholly political. Seen this way, it also allows analysing how different actors may either insist on one specific dimension, the articulation between dimensions or the premises or implicit statements about the properties of the other dimensions.

Indeed, and although the general norms associated with biodiversity may seem widely shared (like the value of ‘life’ and ‘diversity’), when entering into the details of the exact biodiversity that ought to be preserved, why it should be preserved and how it should be preserved, the norms and criteria of decision are much less consensual, and their legitimacy relates to the differentiated capacity of action of the actors. They therefore evolve with the definitions, the actors and the context. On the other hand, although the emergence of biodiversity definitely participated in changing both focus and perspectives in the ways the living world is organized, it absolutely didn’t foreclose the discussion. Quite the contrary, it opened a vast array of new conceptual and phenomenological approaches to understand the world, and they became the object of new controversies regarding what it means, for whom and when, and its (cosmo)political and ethical entanglements.

1.2.4 The institutionalisation of biodiversity

As the environmental preoccupation and the movement for the “conservation of nature”, including habitats and endangered species, started to reconfigure themselves around the pressing issues of climate warming and biodiversity loss, both became the new focus of the UN environmental action, gaining progressively an hegemonic place in the hierarchy of global environmental issues. Nonetheless, their seemingly homogenous aspect is constantly challenged by the deep complexity of the wide variety of issues and scales they pretend to reassemble and which descriptions and prioritization are themselves far from stable.

Therefore, while focusing on the management of biodiversity, it is important not to lose sight of how it is made to relate to other preoccupations and issues, to things that matter and to other risks. The majority of assessments do try to link biodiversity issues with global and generic human preoccupation through a myriad of epistemological lenses but, as the milieux comes into interaction, those issues are always disputed and interacting in non-predictable ways.

The translation of the preoccupations into systems of information, evaluations, consultation and decision mechanisms are themselves raising questions regarding the type of coherency that they ought to achieve. For example, the signature and installation of the Convention on Biological Diversity, with a focus on “the sustainable use of its components and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources”, being much more directed toward forging an agreement on the exploitation of biodiversity than toward its protection, wasn’t reassuring for many advocates of the protection of nature (Blandin 2014). But one could also point to the “reality schism” (Aykut and Dahan-Dalmédico 2014) between the ambitions and the decisions as well as between the targets and the accomplishments, as shown by the successive failure to reach the goals set during the Johannesburg Earth Summit in 2002 for the year 2010 and then again the failure of the Aichi targets set in 2010 for 2020, with zero targets reached fully and only a minority that were partially (Convention on Biological Diversity - CBD 2020).

1.2.5 Biodiversity in tension between ecology and economics

As shown by the above sections, “Biodiversity” is in constant tension between different knowledges and knowledge paradigms, but, as a percept-concept-precept, it is also in tension between a multitude of actors in different universes (sectors, scales, experiences...). Its meaning indeed has to accommodate many different users and contexts (both actively worked on so to render them compatible) who might themselves have contradictory desires and rationalities. A central point of tension is the strictness of its definition versus something that could be closer to an idea, which would remain vague but evocative, but its meanings also performatively emerge in friction between its actualized potentiality and its embedment into strategies, situations and understandings.

One of the associations generating recurrent controversies, due to its conceptual and practical consequences, is the assimilation of biodiversity by the neoliberal economy and the types of links that are established between business and biodiversity. While the approach of biodiversity-as-resource took its roots in the CBD, it was quickly followed by defining programs like the Business and Biodiversity Programme of the IUCN in 2003, and The Economics of Ecosystems and Biodiversity (TEEB) study (2007-2011) which aimed at developing standards for natural capital accounting.

These approaches illustrated the intention of a number of actors to act on what they considered to be one pillar of sustainable development through building the “business case for biodiversity¹⁶” (and later the one for biodiversity offsetting, as we will further see). This case, consisting in demonstrating to the businesses their reliance on “biodiversity” on one hand, and showing the impacts (“negative externalities”) of their activities on “biodiversity” on the other (both references to “biodiversity” being specific and not necessarily of the same kind, which is why I use quotation marks). To make it more appealing to companies, documents may present

¹⁶ For example, the “Business Case for Biodiversity” page on the website of the CBD indicates the following: “We live in an age where environmental and sustainability issues are more visible than ever before. While environmental and economic concerns may appear to be very different issues, they are actually deeply intertwined.

Businesses must acknowledge their impacts and dependencies on biological diversity and ecosystem services within their core strategy and operations. In doing so, they are better positioned to avoid risks and exploit opportunities. Managing biodiversity is, therefore, a way to manage risk. The consequences of biodiversity degradation and loss can lead to higher input costs or the disruption of key elements of a value chain. Biodiversity is also increasingly being considered by governments, with a resulting increase in regulation.”

<https://www.cbd.int/business/info.shtml>

as well the “opportunities” that can take their source in “biodiversity”, whether they are operational opportunities, the opening of new markets, innovations or gains in reputation and credibility (Fromageot et al. 2013).

Opposing this economic approach, a number of actors, including indigenous peoples and representatives from South American countries, in particular Bolivia, advocated for the use of the notion of ‘Mother Earth’ within intergovernmental bodies. They’ve succeeded in having it adopted and used by the IPBES, expressed as an alternative for biodiversity in “other knowledge systems” (Díaz et al. 2015), but the term isn’t present even in the most recent documents of the CBD. The *zero draft of the post-2020 global biodiversity framework* for example only uses the terms ‘biodiversity’ and ‘nature’, which is the third term used by the IPBES because it is the most “inclusive of all these world views” (science and other knowledge systems), while ‘biodiversity’ is considered to be comprised by the concept of nature when it is considered “within the context of science¹⁷” (Díaz et al. 2015).

From its origins as a biological concept, to its possible use as an ecologists’ strategy for funding, to the orientation of the CBD toward its character of existing or potential resources to be used sovereignly, to the emphasis on the services it provides to humans, to the ‘values’ that those same humans ‘hold’ or should hold toward it, the history of biodiversity tells the story of the strategies developed by actors who intended to transform what biodiversity was about, and the story that embeds it.

1.2.6 Biodiversity as an object of controversy on the nature of knowledge

Biodiversity is used by a wide variety of actors who are in turn sometimes critiqued by purist ecologists and biologists who consider that “their” idea or concept of biodiversity is too often “misused”. For example, in an article for the media AOC remarkably titled *Biodiversity between belief and knowledge (La biodiversité entre croyance et connaissance)*, Alain Pavé, an eminent French biometrician close to the ‘ecoskeptiks’ (Blondel 2020), regrets that “this media success went hand in hand with a weakening of its scientific credibility”^{18*}. Seemingly ignoring the intentions of the community of researchers who promoted it, he considered legitimate to embark Stephen Hawking in its crusade for sorting out science from beliefs by using his famous quote stating that “the greatest enemy of knowledge is not ignorance; it is the illusion of knowledge”. But since the concept of biodiversity never was purely scientific, and that the scientific necessity didn’t require to forge it, other authors like Roebuck and Phifer (1999 cited in Faith 2017) “lament what they perceive as current “positivism” in biodiversity conservation”, and “argue that biodiversity conservation is rooted primarily in ethics and we must not continue to back away from values and advocacy”.

Positioning themselves perpendicularly to this debate, and far away from the internal conceptual controversies of the ecologists, a number of indigenous people have expressed that the scientists, with their unrooted views of knowledge, may never understand what it *really* is. Already in 1999, in the *Cultural and*

¹⁷ Smartly, the exact formulation states that ““Nature” in the context of the Platform refers to the natural world with an emphasis on biodiversity. Within the context of science, it includes categories such as biodiversity, ecosystems”. Therefore, while biodiversity is comprised in nature within the context of science, it is said in a way that doesn’t limit the validity of “biodiversity” to the scientific context.

¹⁸ *La biodiversité entre croyance et connaissance*, Alain Pavé, 2019. The title of the article itself allows to express some doubts regarding the propension of its author to not abuse of authoritative position.
<https://aoc.media/analyse/2019/08/20/la-biodiversite-entre-croyance-et-connaissance/>

Spiritual Values of Biodiversity supplement of the UNEP Global Biodiversity Assessment, numerous voices were criticizing the way biodiversity was approached by scientists, whether because of their mechanical perspectives on nature, their claims of objectivity, the necessarily mediated relation with technical instruments or the superiority they seemed to express with their neocolonial attitudes. For example, Michael Kapo, of Papua New Guinea expressed that:

My question now is how can scientists come along and say that this is what biodiversity is all about. (...) The scientists say that what we have to say is trash. Instead, the scientists come with a rod and go to a river and test it and say this or that is so bad. We don't need a rod to know that a chemical is changing things. When we plant root taros near swampy areas and find that our taro is not coming up very good, we know things are bad – but nobody dares listen to us. So, as I've said, if you wish to explain biodiversity, you have to look far beyond the scientist's style. It's not that I am snobbish about science: instead I am not grateful for the fact that science does not consider the indigenous way of explaining what biodiversity is all about. Scientists are flying in and flying out (...) saying, 'We are going to explain biodiversity'. They tell us, 'We are going to teach you how to catch your own fish in a sustainable way'. (...) So you know if indigenous societies all across the world have been able to live for thousands of years and we were able to explain and maintain ourselves in the Pacific, we come to the conclusion that science, at this point in time, consists of a record of what has gone wrong with the world. (United Nations Environment Programme 1999:157)

As will be described later in greater detail, biodiversity is also understood as being of different natures and takes absolutely different shapes depending on how it is approached and whether it is considered to be an object of study or a life milieu. Beyond the variety of the descriptions and definitions, some of them stabilized by agreements or authoritative statements, the idea of biodiversity is constantly challenged when it becomes “used”, “applied” or translated in specific contexts or goes through specific dispositifs.

1.2.7 From the concept of biodiversity to the human preoccupations toward it

One of the most ambiguous and unclear aspects of the concept of biodiversity is the place that human beings have in relation to it, in particular whether they are included in it, to which extent, and what would either inclusion or exclusion would mean. And some deeper and more troubling questions about the human genetic diversity, the considerations of bodies as ecosystems and the challenge posed to the concept of individuality, among others, are in the vast majority of cases barely mentioned or considered. The corollary of this uncertain nature of human beings and of their place in relation to biodiversity is therefore the uncertainty relative to the importance that humans should give to biodiversity, depending on what it is and how it relates to them, physically, materially, symbolically and morally.

While biodiversity has numerous definitions, some of them take precedence and transform the perceptions of the ways humans fit within the wider web of life, and therefore the relations between biodiversity and the possibility of sustaining human life, as well as the desirable relations that the society should have toward other beings. For the present research, this implies to consider biodiversity in the modern historical process in which humans tried to find concepts to help them select and describe the meaningful properties of their environment, to characterize the ways those properties relate to human life, and what humans should therefore do to preserve the cosmological order that allows life to continue. In many ways the conceptual and perceptual propositions

that emerge in dialogue with the idea of biodiversity do not fit so well with the ontologies of Descola, themselves deeply intertwined with the ethics toward other beings. Nonetheless, considering biodiversity as an ontological proposition (or more accurately ontological propositions at the plural form, crafted, transformed and contested), can help perceive what it also does to the definitions and understandings of humanity, which cannot be done without considering it relatively, relationally and jointly with the Other (a non-exhaustive list could include alterity, animals, plants, non-humans, more-than-humans, beings of all sorts, uncertain hybrids, body-territories, collectives, mythological figures, ghosts, ancestors and gods).

As I will show in the next chapters, the questions emerging when considering biodiversity as an ontology can be approached by studying the evolution of environmental policies, as they often involve the explicitation by the actors in the form of accounts of what is the environment that is described and that should be 'preserved', what are its claimed components and their properties, why it is considered that it should 'preserved', for whom, and how.

For Takacs (1996), by using and promoting the term biodiversity, "conservation biologists seek to redefine the boundaries of science and politics, ethics and religion, nature and our ideas about it". This redefinition is done with the "hope to preserve the biotic world" but they also intend to be the those who will have "the authority to speak for it, to define and defend it". Reviewing Takacs's book a few years after its publication, Elsa Valiverronen (1999) considered that "Biodiversity has made a transformation from a scientific concept to a political slogan within the space of just over a decade. During the 1990s, it has become the latest "big" environmental issue, comparable to acid rain, ozone depletion and climate change."

Whereas seen as an example of post-normal science or as a multifaceted term as expressed by Micoud, what stands out of the idea of biodiversity is the deep and untangleable intertwinement of perception and preception, of facts and values, or of science and ethics. But this phenomenon, although not specific to biodiversity, happens to be more acute precisely because of the high stakes that participate to its post-normalization and which relates directly to human lives not only for its consequences but also metaphysically, spiritually or mythologically due to the relation it bears with the ontological definition of the humanity and its relation to other beings. This research will therefore not attempt to uncover what the notion of biodiversity really is or should be, but rather What meanings it holds for the actors that use it, what it makes them to do, or how it relates to what they consider that should be done.

1.3 Ethics and biodiversity: from conjured performativity to knowledge implications

1.3.1 How to situate the humans in biodiversity?

Normatively oriented, the notion of biodiversity is often considered to have the potential of transforming the relation between humans and the other beings that are part of biodiversity, including through the multiple types of relations described. But this reconfiguration is confronted with the questions of defining whether humans are or aren't comprised in "biodiversity", of characterizing the relations between humans and (the rest of) biodiversity, in particular in terms of negative impacts and dependencies. For example, for Francis Gaillard

(2009), the preoccupation for biodiversity goes with ethical considerations of the relations that should be established, because with the biodiversity “it is the question of the place that human beings leave to other species that is raised, and finally that of their own place in ecosystems”^{*}.

Although this is generally much less emphasized, it is also often inquired about what the current biodiversity, the existing species, their dissemination and many other aspects, owes to the relations that humans have established over time with their milieux. Wondering if the history of biodiversity should be told “with or without the humans”, Christian Lévêque considers that “it would be wrong to think that the history of biodiversity as we know it owes nothing to man”^{*}, a common history which also perturbs the quality of ‘naturalness’ that is often associated with it (Lévêque 2008).

Weber and Boeuf, in the introduction of a brochure mostly intended for companies, consider necessary to put an emphasis on the fact that humans are in biodiversity, using a rhetoric of the logical deduction to make it seemingly irrefutable, in order to convince of its importance:

What is 'biodiversity'? Nothing other than the living world, but put eruditely; nothing other than 'living diversity'. And are humans living beings? If so, then it is impossible, even stupid, to imagine the human species on one side and the rest of the living diversity, the living world, on the other. So yes, we are part of the living world. (...) Not only are we part of it, but we are vitally dependent and interdependent on it.* (Weber and Boeuf in Fromageot et al. 2013)

This relation of dependency, and its many faces, is often seen as the core argument to promote the preservation of biodiversity, even if it is understood and expressed differently in different contexts. For example, the French president Emmanuel Macron considered that “the protection of nature fundamentally refers to an ethical question which is the protection of the human being. (...) I do not believe in the effectiveness of the preservation of human rights without preservation of the ecosystems in which we live. For me, this is the philosophical and ethical basis for the preservation of biodiversity¹⁹”^{*}.

In any case, it is expressed by the many users of the concept of biodiversity, who ought to communicate a concern, that humans have a relation with biodiversity, or the rest of it, or within it, and that descriptions of those relations not only define what is at stake for ‘us’, but also how are those stakes re-attached to ethical concerns. Many institutions and actors are therefore trying to “reconnect” or explicating the links they see between humans and biodiversity, through intermediary concepts like well-being, ecosystem services, material flows, or the relation to development goals, among others.

1.3.2 Why care about biodiversity?

When talking about biodiversity, it is common for actors that are not ecologists to try to articulate the preoccupation they have for biodiversity in itself, simply considering trends, with the preoccupation that they have for “us” by finding the links and correspondences that may help understand and support claims about “why should ‘we’ care”. The degradation of biodiversity indicators, the disappearance of emblematic species, the diminution of the bees and other pollinators, the possibility of a sixth mass extinction and the proliferation of invasive species are all objects of this constant back and forth between observations, modelling of trends and relation to human activities, both as drivers and as sufferers.

¹⁹ Declaration for the UN Summit on biodiversity, Sept 30, 2020.

An example of linking a description of biodiversity and the preoccupation linked to it, as long as it corresponds to the properties stated in the description, is expressed by the paradigmatic and very common title of a Guardian information box occasionally present along with articles on biodiversity and that is called “What is biodiversity and why does it matter?”. The Guardian quotes a professor at Oxford University who offers a simple yet strong summary of the situation: “without biodiversity there is no future for humanity²⁰”. Rhetorically asking whether “animals and bugs really matter to me?”, they then answer that “for many people living in towns and cities, wildlife is often something you watch on television. But the reality is that the air you breathe, the water you drink and the food you eat all ultimately rely on biodiversity”. This type of article also exists nowadays on virtually all the websites of institutions, public or private, which actions have a relation with the protection of biodiversity. Following an educational ambition, the public institutions usually replicate the same description and arguments, following the language adopted by the CBD, but occasional off-track sallies may be observed.

For the French Ministry of the Environment (called at the time of consultation the Ministère de la Transition Écologique et Solidaire), the biodiversity is “at the heart of our lives²¹”. Beyond this generic statement, they say that biodiversity is “a library of knowledge and technological innovations”, “provides irreplaceable and indispensable goods for our daily lives” and that “natural environments and species also provide us with many services”*. Therefore what relates it to us is the provision of knowledge, goods and services.

For the European Commission, the link is made through ecosystems, for which biodiversity (again “the variety of life on Earth”) is the key indicator of their health and which “clean our water, purify our air, maintain our soil, regulate the climate, recycle nutrients and provide us with food. They provide raw materials and resources for medicines and other purposes. They are at the foundation of all civilization and sustain our economies. It’s that simple: we could not live without these “ecosystem services”. They are what we call our natural capital²²”. What is not that simple but rather simplistic here is the shift from the unilateral things that ecosystems do for and provide “us”, to the notion of ecosystem services that are then said to be a synonym to “natural capital”.

A page of the CBD website written for the UN Decade on Biodiversity²³, listing again the numerous ecosystems services “that benefit humans and sustain our lives”, tries to convince by saying that “protecting biodiversity is in our own self-interest”. To make the argument even stronger, and maybe misled by a common misreading of Jared Diamond’s *Collapse: How Societies Choose to Fail or Succeed* (2005), it is affirmed that “the benefits of biodiversity have been the foundation of the well-being of all past human civilizations, while the degradation of ecosystems and depletion of natural resources have been root causes for the collapse of past civilizations”, leaving aside other widely discussed causes such as inequalities and colonialism.

²⁰ The box is based on an article asking almost the same question but in a more ‘pedagogical’ way: “What is biodiversity and why does it matter to us?”, using the same ‘us’ then when they say that biodiversity “is in crisis – because of us”. <https://www.theguardian.com/news/2018/mar/12/what-is-biodiversity-and-why-does-it-matter-to-us>

²¹ Biodiversité : présentation et enjeux, Ministère de la Transition écologique et solidaire.

<https://www.ecologique-solidaire.gouv.fr/biodiversite-presentation-et-enjeux> (consulted on 08/06/2018)

²² Why do we need to protect biodiversity?, Environment, European Commission.

https://ec.europa.eu/environment/nature/biodiversity/intro/index_en.htm (consulted on 21/07/2020)

²³ The value of biodiversity, UN decade on biodiversity.

<https://www.cbd.int/2011-2020/about/biodiversity> (consulted on 21/07/2020)

In the three preceding examples, it is not so much about defining a unity (even when talking about “all life”, it seems a to relate to an exteriority) nor a redefinition of the human identity through recalling the coevolution and codependencies between many species and human beings, but it is strictly about “making the case for biodiversity” in a way that is considered the most convincing, even if it is not representative of what it is understood to be. The description therefore focuses on the material flows strictly going from the ecosystems to their human receivers. Here, the potential of perceptual transformation that is underlined by certain descriptions of biodiversity seems to be refrained by an appreciation of the targets of the arguments, thus leading to keep those which are the most appropriate for individualists, materialists and egoists subjects, such as the ones portrayed in advertisements for decades. The arguments seem to be intended for urban post-humanists without ethics apart from their necessities and that didn’t realize their dependencies, or to the contrary had already believed that human societies had emancipated from their physical needs and biological origins. But it may also be the rational and calculating subject, who may like to go into the forest on weekends but who has a common job in which rentability and efficiency are the utmost values. Descriptions of biodiversity and of its relation to the different types of knowledge therefore has to match the type of human subject that those descriptions embed or are intended for.

The description of the UN Summit on biodiversity, which virtually gathered a large number of world leaders on Sept 30, 2020 “to provide political direction and momentum” before the postponed COP15²⁴ during which was to happen the final negotiations of the “post-2020 global biodiversity framework”, setting goals for future decades, started with these sentences:

Our societies are intimately linked with and depend on biodiversity. Biodiversity is essential for people, including through its provision of nutritious food, clean water, medicines, and protection from extreme events. Biodiversity loss and the degradation of its contributions to people jeopardize progress toward the Sustainable Development Goals (SDGs) and human wellbeing. The evidence of these connections is clear. The COVID-19 pandemic has further highlighted the importance of the relationship between people and nature. We are reminded that when we destroy and degrade biodiversity, we undermine the web of life and increase the risk of disease spillover from wildlife to people²⁵.

It was also added that “more than half of the world’s GDP [Gross Domestic Product] is moderately or highly dependent on nature”. “Connecting the dots”, highlighting relationships and rendering visible dependencies are therefore at the centre of most descriptions of biodiversity aiming at convincing of the “value” of biodiversity, and in particular of the hazards that may arise from its loss.

When we look at other actors, the ways of answering the same question can build on a large variety of other perspectives and analyses. To take only one example showing the difference of style, here’s a description of the relations as written by a person who isn’t an academic, from the government or writing for a company, but who started a podcast on environmental issues (I will focus on the Colombian discourses in the following chapters):

²⁴ The UN Biodiversity Conference, which is the Fifteenth meeting of the Conference of the Parties (COP-15) to the Convention on Biological Diversity, themed "Ecological Civilization: Building a Shared Future for All Life on Earth", was originally planned to take place in Kunming, China in October 2020 but was postponed to 2021 due to the coronavirus crisis.

²⁵ July 24, 2020, Concept note for the 2020 UN Summit on Biodiversity.

<https://www.un.org/pga/74/wp-content/uploads/sites/99/2020/07/Biodiversity-Concept-note.pdf>

In a harmonious, functional living community, each species feeds or is fed by other species, forming a cycle of life. No species monopolises all the resources necessary for the survival of the others, or exterminates its competitors. Why is this? Because when environmental conditions change, life is more likely to adapt and be resilient if there are many and varied species. Life needs biodiversity, and Wild Life, and this rule has played an essential role for millions of years. And if a species decides to appropriate all the resources, the Structures of the Earth and to kill all the competitors, the impoverishment of the living which results from it does not only threaten this species, but the very possibility of living on the planet. As you can imagine, this is exactly the madness that Western mass society is engaged in today.*²⁶

Here the description of the human action is done by comparing it with a counterfactual scenario of the “right” idealized natural community, in which obviously no one does what humans are doing because it doesn’t make sense in terms of specific and collective resiliency and survival and that it is simply “crazy”. The trouble described here is therefore not anymore about specific “services” on which humans depend, but simply and profoundly about an existential threat.

1.3.3 Frameworks of Human-Nature relations and ethical implications

Considering the importance of describing the dependencies, the assessments of biodiversity at the global level needed models of the direct and indirect relations between humans and biodiversity and its components to allow a description of the causalities at work. These models, built in the form of conceptual frameworks, evolved regularly, shifting the understanding of our relations and the ethical implications regarding the desirable ends and means.

In the first Global Biodiversity Assessment produced by the United Nations Environment Programme in 1995, it was considered that the “increasing environmental awareness over the past few decades has highlighted the need to enhance our understanding of the ways in which human society and biodiversity interact” (Heywood 1995). It is conceptualized as a cycle of interactions (see Figure 2) in which the biodiversity is impacted by “Human influence” emerging from a “human society” submitted to “underlying driving forces”, while “human society” is influenced by biodiversity through the “values of biodiversity”. The factor of change is the “measures” that can be applied to the four elements in interaction.

²⁶ Presentation of the small independent media Floraisons.
<https://floraisons.blog/apropos/>

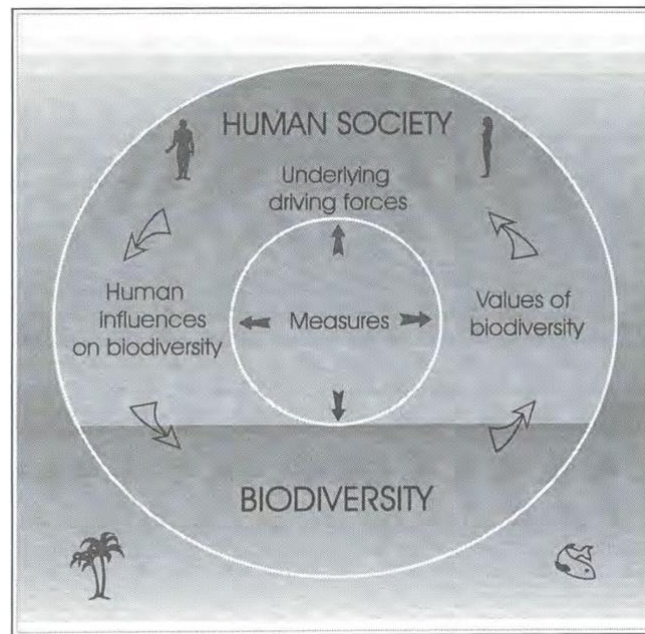


Figure 1.0-1: The interaction between human society and biodiversity.

Figure 2: Figure from the UNEP Global Biodiversity Assessment representing “the interaction between human society and biodiversity”.

For the Millennium Ecosystem Assessment (2005), which famously included the newly created concept of ecosystem services, the conceptual framework has been reworked, and an important amount of work has been dedicated to determine the links between ecosystem services and the “determinants and constituents of human well-being”. Indeed, the framework “places human well-being as the central focus for assessment, while recognizing that biodiversity and ecosystems also have intrinsic value and that people take decisions concerning ecosystems based on considerations of well-being as well as intrinsic value”. Here, biodiversity isn’t directly represented in the framework, moving to an “ecosystem approach” which considers biodiversity as a “structural feature of ecosystems”, and changes in biodiversity can therefore influence the services they provide. In addition, the authors of the Framework for Assessment (Millennium Ecosystem Assessment 2003), expressed that “this approach recognizes that humans, with their cultural diversity, are an integral component of many ecosystems”. In the framework both indirect and indirect drivers of change as well as ecosystem services impact human well-being, while the “strategies and interventions” can impact basically all the interactions between components. This representation was guided by the idea that, “in order to implement the ecosystem approach, decision-makers need to understand the multiple effects on an ecosystem of any management or policy change”.

The framework also proposed to integrate, or to at least acknowledge, the variety of spatial and temporal scales. But the ecosystem approach necessitated redefining the nature of the extension of an ecosystem: “for the purpose of analysis and assessment, a pragmatic view of ecosystem boundaries must be adopted, depending on the questions being asked”.

Through the “ecosystem approach”, new ethical links were also drawn between actions and their various and varying consequences on human groups and their “well-being”, since its improvement or degradation are now considered to largely depend on the services that ecosystems provide, which “value” is considered to be

too often ignored or underestimated in decision-making processes, and that “the best way to manage ecosystems to enhance human well-being will differ if the focus is on meeting needs of the poor and weak or the rich and powerful”.

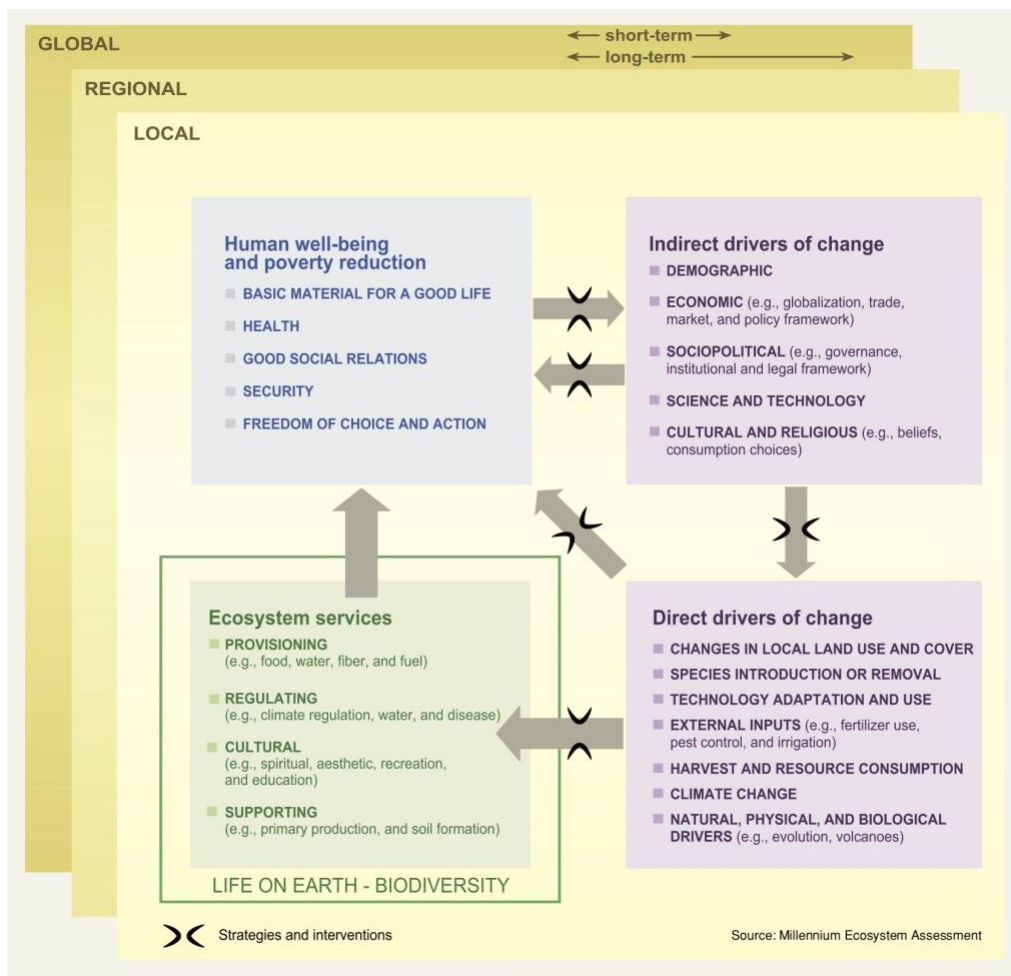


Figure 3: Millennium Assessment Conceptual Framework, figuring the “interactions between biodiversity, ecosystem services, human well-being and drivers of change”.

The IPBES framework (see Figure 4), which is “a highly simplified model of the complex interactions between the natural world and human societies”, responds to one of the starting points of the platform, being that stronger responses to biodiversity loss “requires an improved understanding of [human] pressures”, and its goal “to catalyse a positive transformation in the elements and interlinkages that are the causes of detrimental changes in biodiversity and ecosystems and subsequent loss of their benefits to present and future generations” (IPBES 2013).

As the relations between biodiversity and humans get redefined, they also redefine in the same movement what biodiversity and its related concepts and “components” are, like species and ecosystems. For Chateauraynaud and Debaz (2017), the difficulty for institutions like IPBES is that “the entry into the scene of a plurality of cultures and local knowledge, which we prefer to refer to as experiences of the milieux, forces global actors to make ontological, epistemic and axiological contortions. The tensions were already evident in the Millennium Ecosystem Assessment, with the very definition of ecosystems changing radically depending

on the place given to human activities”*. And, as the definitions of ecosystem change, the moral stances that relate and mediate the relations of the humans to them are also transformed.

As the IPBES was formed, its framework aimed at integrating even more the various “worldviews”. This showed by contrast that the terminology usually used in past assessments and institutions, along with its ontological and epistemological basis, was far from consensual. The advent of the idea of biodiversity, ought to create shifts regarding what should matter in the biophysical world, is indeed inheriting of a vision informed by a peculiar combination of ‘naturalist’ and capitalist perspectives. There were therefore numerous discussions and disagreements during the elaboration of the IPBES framework²⁷ on the notion of biodiversity, which was classified as emerging from “western science”. While western countries may have wanted to get rid of the word ‘nature’ because of its problematic history and meaning, countries defending another approach therefore advocated for keeping using it, and the term “nature” was finally considered to be the most consensual, although not the best for a number of groups. A country like Bolivia for example considers it as still pertinent to defend a view that is not just scientific, at the condition (on which they regularly and repeatedly insist) that it is considered that “humans are part, and not aside, of nature²⁸”, but also proposed as alternatives “Mother Earth” and “Systems of life”.

For Diaz and the few dozen persons who wrote the paper establishing the IPBES conceptual framework, aiming at “connecting nature and people” (Díaz et al. 2015), the main differences in the IPBES approach compared to the previous ones is its inclusive and participatory aspect, as well as its explicit desire to incorporate a wider variety of scientific disciplines and stakeholders. The framework aims at depicting the “six main elements to link people and nature” which represent “the natural and social systems that operate at various scales in time and space: nature; nature’s benefits to people; anthropogenic assets; institutions and governance systems and other indirect drivers of change; direct drivers of change; and good quality of life” (Díaz et al. 2015). The framework uses the “consensual” vocabulary elaborated during the workshops and which is said to encompass the “different knowledge systems (western science, indigenous, local and practitioners’ knowledge)”, but interestingly it doesn’t seem to have intended to include spiritual views.

The ethical implications that are considered that the work of IPBES should have are quite visible when considering that their framework, like the one of the Millennium Assessment, includes human “well-being”, making it a goal of the IPBES to study the many ways through which it linked to biodiversity and help achieve it. It is also explicitly the concerns related to those relations which lead to the development of IPBES, as well as the goal of the actions on biodiversity. The relation is often made even more explicit when are considered the relations between the non-preservation or loss of biodiversity and negative impacts on the “well-being”, with all the ethical implications relating to basic human rights²⁹.

²⁷ For an overlook of those discussions, the drafting of a first version of the framework as well as a compilation of previous frameworks that have been used for inspiration, see United Nations Environment Programme (UNEP), 2013, Outcome of an Informal Expert Workshop on Main Issues Relating to the Development of a Conceptual Framework for the IPBES (IPBES/1/INF/9). For a discussion of the debates regarding the elaboration see Borie, M., & Hulme, M., 2015, Framing global biodiversity: IPBES between mother earth and ecosystem services, *Environmental Science & Policy*, 54, 487–496.

²⁸ My observations, which I will detail in the chapter focused on IPBES.

²⁹ According to the IPBES Glossary, a Good quality of life is, “within the context of the IPBES Conceptual Framework – the achievement of a fulfilled human life, a notion which may varies strongly across different societies and groups within societies. It is a context-dependent state of individuals and human groups, comprising aspects such as access to food, water, energy and livelihood security, and also health, good social relationships and equity, security, cultural identity, and freedom of choice and action. “Living in harmony with nature”, “living-well in balance and harmony with Mother Earth” and “human well-being” are examples of different perspectives on a “Good quality of life””.

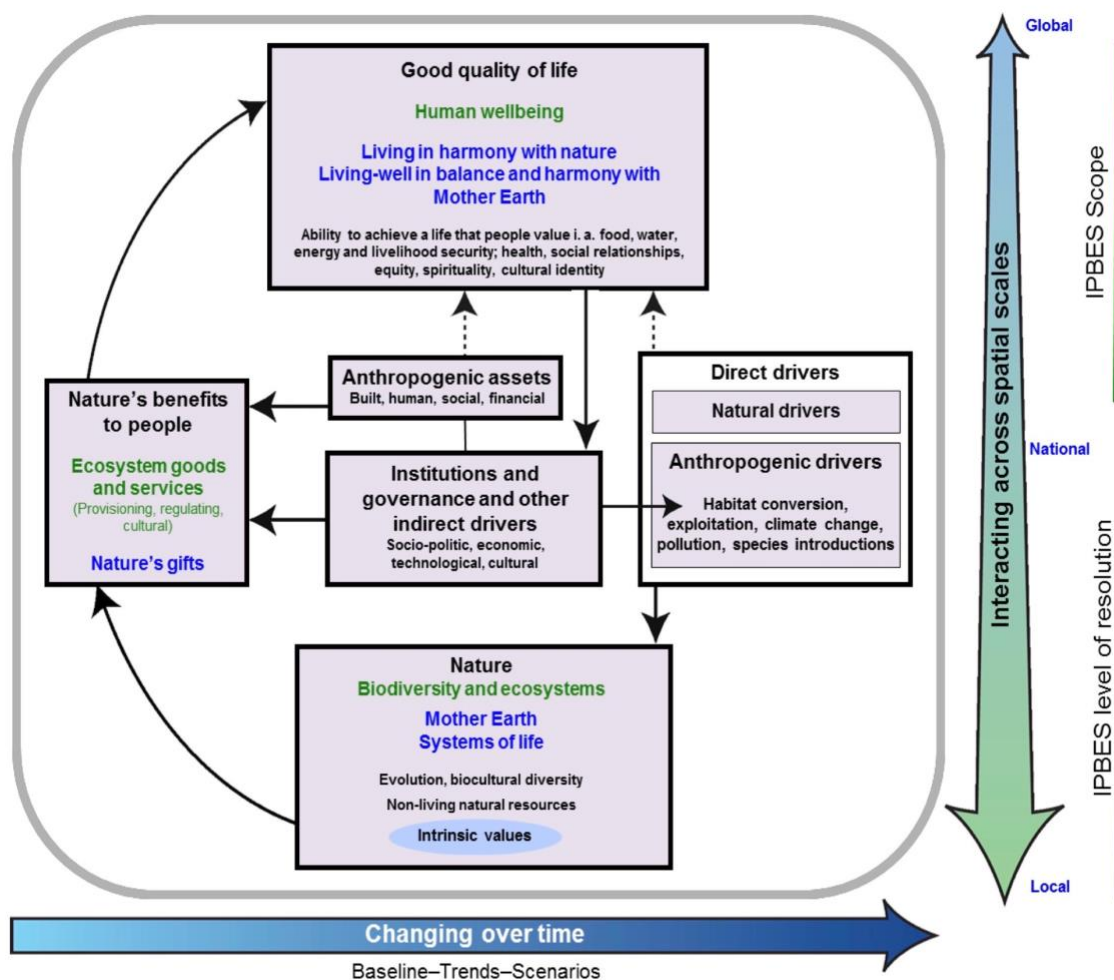


Figure 4: IPBES conceptual framework³⁰.

For Jetzkowitz (2017), “this conceptual framework explains the differences between these categories as being rooted in different knowledge systems, which means that they are the product of different interpretations and evaluations. Insofar as these different conceptions are linked to different interpretations, their explanation constitutes a task for the social sciences. Insofar as they are linked to different evaluations, their explanation and justification constitute a task for ethics”. But while the fact that a variety of interpretations renders necessary their understanding through an ethics approach, for the IPBES the inclusion of the different knowledge systems isn’t just instrumental but emerged from an ethical stance based on the principle of recognition.

While the framework uses simultaneously three different types of vocabulary, the interactions are described as remaining similar regardless of the concepts used, which makes them look like interchangeable, and therefore with little ethical and practical consequences. Nonetheless a shift, possibly partly emerging from the discussions about the various concepts and their meaning, was brought by the IPBES Global Assessment, and further developed in the post-2020 global biodiversity framework, consisting in considering that the goal is not only to maximize human well-being but that it will also be necessary to redefine the meaning of a “good

³⁰ from Decision IPBES-2/4: Conceptual framework for the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

quality of life”, said to be expressed in other knowledge systems as living in balance or in harmony either with nature or with Mother Earth.

In the CBD’s 2050 *Vision of living in harmony with nature*, which should allow the realization of a “wish to achieve a greater balance with nature” (Convention on Biological Diversity - CBD 2020), it is interesting to see how they link this goal with a transformation of the conceptual framework toward a performative desirable future one. Elaborating for the first time on “Interpreting the Vision – what does ‘living in harmony with Nature’ look like?”, the draft of the fifth edition of Global Biodiversity Outlook presented a new framework taken from Lundquist et al.’s work toward “A Pluralistic Nature Futures Framework³¹” (2020) and that ought to become the IPBES Nature Futures Framework. Its goal is to “capture the multiplicity of relationships between people and nature” by considering three conceptualizations of nature (see Figure 5), that are Nature as Culture, Nature for Society, and Nature for Nature that aim at reconciling the different sources of “values” that are usually attributed to nature, in particular in the work of IPBES. The authors of the framework express clearly the link that they see between the descriptions of the relations between humans and nature and the considerations that actions are necessary, implying whether material or ethical transformations, as “these relationships with nature frame the storylines that motivate society to act to conserve nature, thus they should serve as the foundation for the next iteration of global biodiversity strategies and goals” (Lundquist et al. 2020).

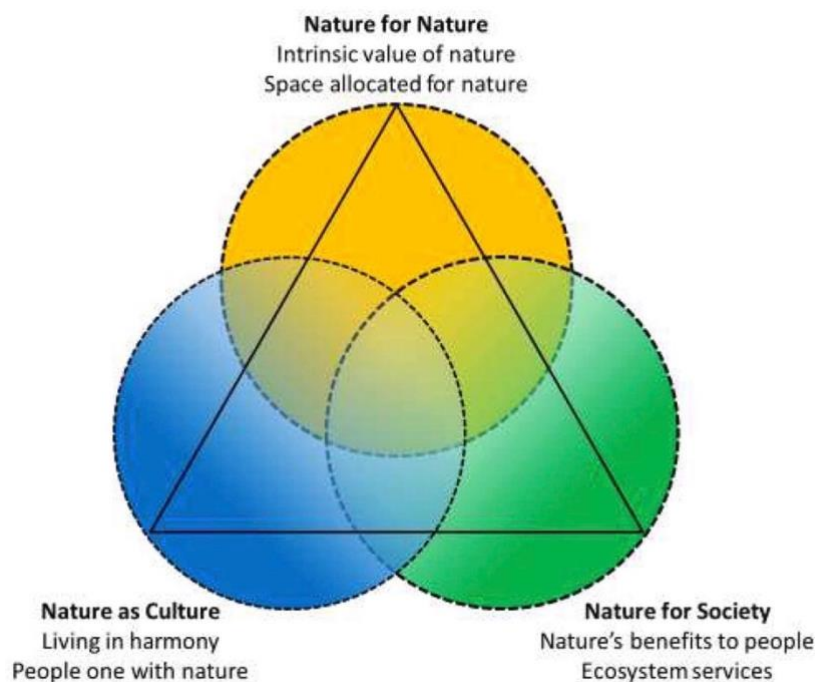


Figure 5: Pluralistic Nature Futures Framework from Lundquist et al. (2020), and which was considered for its inclusion in the GBO5 and later removed.

³¹ Following tensions during the discussions of the “post-2020 global biodiversity framework” between the countries regarding the opportunity appropriateness of elaborating on the Vision 2050 or to keep it blurry and therefore consensual and adaptive, the framework along with the whole part about “interpreting the vision” has been deleted from the final version of the Global Biodiversity Outlook published on Sept 15, 2020. The draft was expressing that they had to interpret it because it “may seem an abstract and lofty aspiration”. No more comments regarding its abstraction or loftiness subsisted in the final version.

1.3.4 From biodiversity values to valuations

Used in a wide variety of publications on biodiversity, the notion of value is problematic from the start because of the polysemy of the term value, which mixes very different sets of semantic categories, and that some authors sometimes awkwardly try to combine or to translate from one type to another one. As a starting point, let say that for Maris et al. (2016), the polysemy of ‘value’ refers to three types of definition which are considering value as a measurement, which can be ecological or monetary, as a preference, mostly subjective, or as a collective norm, that may or may not be institutionalized and which can be political, moral, religious or traditional.

In my view, two types of approaches are usually taken by the actors with regard to the value(s) of biodiversity, sometimes referring to the same type of conceptualization of values and sometimes different. The first one, which is the most common approach when considering the type of attachments that humans have with regard to biodiversity, is to define the “values” that humans or social groups “hold”, which would refer to the collective norms. It is in general linked to a classification in terms of instrumental or intrinsic values, that are considered to evolve due to mostly material factors external to the group which holds them. The second one starts from the statement that biodiversity isn’t protected enough because its value (or values) isn’t enough known or acknowledged, or that new ways to give it new value or to express its ‘true’ value should be found, mostly through new types of measurements, and then communicated. This is typically the approach which leading to the consideration of the services that ecosystems render as well as of the economic valuations. Changes of value are then here the consequences of the production of knowledge and evaluations.

a) The diverse categories of biodiversity values

Analysing the values that groups “hold” with regard to biodiversity is common in economic and psychological approaches to ecology, but it is a problem that is also often addressed in the assessments produced by international organizations, as it was in the Millennium Ecosystem Assessment (MA) and in the IPBES Global Assessment on Biodiversity (GA). In the MA, values were considered because of the way they dictated choices impacting the ecosystems. Those choices were considered to be dictated by a varying combination of “utilitarian” values, considered to be equivalent to anthropocentric values, and non-utilitarian values, considered equivalent to the intrinsic values. In the GA, a relatively short part focus on the question of values, since they are considered as one of the “indirect drivers” impacting the evolution of biodiversity. Two main statements are made which are that “different social groups hold different values” and that “values of nature are rapidly changing”. For the authors, using IPBES’s language, “the different values people hold concerning nature, nature’s contributions to people, and their relationship to the quality of life affects people’s attitudes toward nature and, thus, the policies, norms, and technologies which modulate people’s interactions with nature”. From this statement, it can be understood that values are “held”, that they concern not only nature and “nature’s contributions to people”, but also how those two relate to “quality of life”, meaning that values are both on specific objects but also on their relations, and in particular the relation between nature and the quality of life of the value holder. There is then a causal link between those values, the “attitudes” (a language commonly used alongside the concept of values) and then the policies, norms and technologies. While it is not

clear who are the “people” whose values affect policies, and that it seems to erase all political struggles behind the design of policies and the transformation of norms, another determinant issue comes from the sequentialization of the causality, that is also common in “value studies”, and which do not account for the complex processes through which the different elements are formed together in specific time and places, and finally puts the values as the primary source for the rest.

The authors of the GA then describe the “values concerning nature” as possibly being instrumental, intrinsic or relational. The third concept is an addition compared to the MA, and is a reframing of the “cultural values” and contrasts with the so-called New Ecological Paradigm Scale, which was used to demonstrate the variation among diverse population of their “beliefs about nature” along an ecocentric-anthropocentric continuum (Klain et al. 2017) echoing the opposition between intrinsic and instrumental values. The concept of relational values was developed and promoted by a group of researchers of the Institute for Resources, Environment & Sustainability of the University of British Columbia, Canada, after they participated to workshops organized by the IPBES taking advantage of the “window of opportunity for the relational values concept” (as recounted in Chan, Gould, and Pascual 2018). After having considered it to be potentially helpful to “broaden perspectives on the intersection of ecosystem services and ethics” (Chan et al. 2018), for those researchers, it was “time to engage seriously with a third class of values, one with diverse roots and current expressions: relational values. By doing so, we reframe the discussion about environmental protection, and open the door to new, potentially more productive policy approaches” (Chan et al. 2016).

By contrast to an inherent worth or capacity to satisfy their preferences, relational values about nature have been described as the way people “consider the appropriateness of how they relate with nature and with others, including the actions and habits conducive to a good life, both meaningful and satisfying” (Chan et al. 2016), or more simply values that “appreciate relationships between people and (elements of) nature” (Chan et al. 2018; IPBES 2016). The GA explains that relational values are mostly held by indigenous people, paradigmatic example of “groups who hold in high regard their relationships with nature often hold moral principles for living in harmony with nature”. This view, recalling that of the “noble savage” or of the “ecological Indian” (Krech 1999), is then counterbalanced by the instrumental anthropocentric and materialist worldview associated with the fact that “utilitarian paradigms viewing nature as a resource for economic development have intensified over the last centuries, especially in industrialized regions”. They then consider that, “in practice, values can be simultaneously instrumental and relational”, but only take as an example the indigenous and local communities. While it may be fair to put them forward, it could be argued that seeing things in such a black and white way may not help our understanding of the specific and various reasons that relate to specific decisions at other scales and for diverse groups. Finally, the intrinsic values are described as emerging mostly from philosophers, and it is hard to see if and how they articulate with the other ones. Also acknowledging their poor integration, authors working on new frameworks considered that their understanding as an abstract ethical motivation renders them difficult to explicit and to compare with anthropocentric values, and thus be potentially derived into environmental management policy.

For the authors of the GA, a central issue is the change of values, and they consider that “the values at the core of individual and social priorities and behaviours also can evolve over time, informed by awareness, experience, culture and society”, which again leaves aside the social struggles, the mobilization of actors for recognition and the even access to the definition of “social priorities”. While expressing that changes in the

“human perceptions of and relationships with nature” in the last century have been mostly driven by globalization, climate change, and population migration, they seem, on the other hand, to view positively the “trend toward greater awareness of the importance of nature to human well-being in the scientific community and across society”. The emphasis on “awareness” is congruent with the Aichi targets set in 2010 in which target 1 was to raise awareness among the population of the importance of biodiversity. It would be wrong to portray in a caricatural way the transformations of values that the GA describes, since they do explain that “global influences can challenge local practices”, that “migration, domestic and international, can disrupt relationships between communities and lands” and that climate change also leads to “changes in practices and the values associated with them”. Nonetheless, putting on the same level those profound trends with a rise of “awareness” as well as with positive changes of the “views of what constitutes a good quality of life” can be questioned to the least.

This approach to values seems quite weak in comparison to what had been proposed by the very wide compilation of deep analysis and testimonies present in the 1995 UNEP publication on “Cultural and Spiritual Values of Biodiversity”, and that is not cited in the GA despite the much richer descriptions that it provides. But the importance of values as indirect driver of biodiversity loss for the IPBES led to the decision³² of ordering the “methodological assessment regarding the diverse conceptualization of multiple values of nature and its benefits” that was already awaiting its turn for a couple of years. Its rationale is based on the observation that “at present, the design of governance, institutions and policies rarely takes into account the diverse conceptualization of multiple values of nature and its benefits to people”, while they consider that a number of advantages would arise from taking them into account, and therefore linking to the second type of approach to values. These advantages include the possibility of elaborating a more complex and nuanced view of valuation, empowering marginalized groups and going “beyond conventional economic approaches”. More generally, it is hoped to find new “approaches that acknowledge, bridge and integrate the diverse values and valuation methodologies for policy and decision-making”.

b) The quest for attributing value to biodiversity

As already suggested during the presentation of the evolution of the conceptual frameworks for the assessments on biodiversity, a wide range of actors consider that the loss of biodiversity is linked in good part to the fact that the true or correct value of biodiversity is not seen, acknowledged, integrated or internalized by the people, decision makers or institutions which actions impacts biodiversity, and therefore wonder “how to valorize biodiversity” (Rambaud and Roy 2011). Their mission therefore becomes to redress this wrong by finding the right concepts and methods in the hope to ‘mainstream’ them or that it will become the norm, legally or conventionally.

The emergence and wide uses of biodiversity illustrate the tentative transformation and redefinition of environmental issues by various actors, whether by “raising awareness” or by reconfiguring and extending the “values of biodiversity”. The emergence of actors claiming that utilitarian arguments are the most efficient and persuading lead to them to craft the concepts of “natural capital” and “ecosystem services”, which generated in turn large oppositions. While ecosystem services are said to have been invented to be able to better describe

³² See IPBES decision IPBES/6/INF/9 made at IPBES6 in 2018.

the dependence and relations going from the nature viewed through the concept of ecosystems to the humans, it is considered to allow above all the valuation of what became endangered. This conceptual transformation is linked to “an environmental crisis of elements which, until now, seemed to go without saying, like the air we breathe and the water we drink”* (Larrère in Hache 2014:8). Since those are not obvious or given anymore, it is considered that they should become monetized goods, and that “payments for ecosystem services” should be put in place in order to avoid their vanishing.

A widely-cited research paper of recent years aiming at describing the links between biodiversity and human communities, and in particular the potential consequences of biodiversity loss and its relation to ecosystem services, is *Biodiversity loss and its impact on humanity* by Cardinale et al. published in Nature in 2012. The main problem they describe is the difficulty to establish a clear relation between biodiversity and ecosystems functioning, and therefore with the ‘services’ they bring (Cardinale et al. 2012). Even if that was possible, they also note the existence of complex trade-offs between the services, not only at given place and time but also in their occurrence at various and multiple spatial and temporal scales.

But critics have seen in this transformation the imposition of a neoliberal view of nature opening the door to the economic valuation of ecosystem services leading to their commodification (Gómez-Baggethun and Ruiz-Perez 2011), and thus ultimately to the commodification of biodiversity (Maris 2014). Indeed, only the artificial categorization of the relations between humans and biodiversity in a set of services rendered by ecosystem makes it possible to value them separately, sometimes comparing their estimated monetary evaluation. Besides, the ways those produced estimations are put forward often neglect or deny “particular institutional setup in which environmental policy and governance is currently embedded in shaping valuation outcomes” (Gómez-Baggethun and Ruiz-Perez 2011). Kosoy and Corbera (2010) pointed out three other invisibilities of this process of commodification (the reduction of complexity, the elimination of the multiplicity of values and power asymmetries leading to the reproduction of unequal access to resources and services), leading them to consider it as a form of commodity fetishism. Finally, the process of commodification of biodiversity has been discussed by authors who disagreed on whether biodiversity could be actually considered a commodity, since the existence of an actual market is either nonexistent or so tightly regulated that it would mainly be the expression of a neoliberal governmentality (Boisvert 2015; Dauguet 2015). Habitat banking, compensations and ecosystems services are more and more put under the umbrella term of ‘market-based instruments’ to reinforce an ideological vision of biodiversity conservation (Boisvert, Méral, and Froger 2013; Lapeyre, Froger, and Hrabanski 2014), thus replacing their initial association with ‘mitigation’ (Calvet, Guillaume, and Claude 2015). Nonetheless, they have also been described as actually referring to heterogeneous policy and institutional arrangements with limited features of market governance (Boisvert et al. 2013; Lapeyre et al. 2014).

Still, the concept of ecosystem services has been reframed within the IPBES, under the pressure of representatives of indigenous people and Bolivia who opposed their utilitarian framing, as “nature’s contributions to people”. As described above, both are used within the institution as synonyms referring to different worldviews, and even though the notions of service and of contribution have very different connotations.

The financial evaluations of biodiversity, another large trend of the tentative assignments of value to biodiversity, multiplied in the 1990s (Maris et al. 2016). The emergence of those evaluations has been pushed

either by actors that consider it as a relevant type of evaluation for them, like companies, but also by others who considered that, even if they may not like its principle, it was an effective way to communicate the ‘value’ of biodiversity to people and organizations they saw as being only or mostly able or willing to be touched, to understand or to integrate parameters in economic terms in their space of calculation or decisions. This is for example the case of the NGO Birdlife, which has “started to integrate the language of valuation, of ecosystem benefits, in the lobbying work with the European Commission. This language makes it possible to participate in discussions with political and economic actors who are rather insensitive to ethical arguments and who apparently see no direct interest in defending biodiversity”* (Brunner and EcoRev 2011).

But the idea that everything had to be converted to monetary value in order to render it graspable led not only to local evaluations but also to absurd challenge-like evaluations of global values, like when Costanza et al. (1997) evaluated the yearly production of ecosystem services and natural capital to three times the global gross domestic product (GDP), or when Gallai et al. (2009) estimate the global monetary value of pollination for agriculture. While the estimation of monetary value is generally considered to make sense in some circumstances, some critics have again put forward the risks of commodification, critiqued on a methodological point of view the assumption of commensurability of all the types of quantification that this type of approach was implicating, as well as the economic calculation flaws. It has also sometimes been pointed the morally (much debated) incorrectness of this approach with regard to the ‘invaluable’ price of nature, as when Funtowicz and Ravetz declare that “if the valued goods that give richness to our lives are reduced to commodities, then what makes those lives meaningful is itself betrayed” (1994). The moral judgement considering ‘wrong’ to give a price to biodiversity is then often linked to the defence of its “intrinsic” value.

The conservation of biodiversity is also often related to the future, and sometimes even linked to the safeguarding of the future of humanity. Invoking the popularized ethics of responsibility (Jonas 1985), it is also sometimes considered that it is a duty to conserve it for “future generations”, who have the right to inherit of a planet in “good health”. But it is also sometimes argued that it is also a matter of not jeopardizing future potentialities, in particular regarding genetics. An intuition that is difficult to express suggests that it would be unwise to harm these biological diversities which are both the result of natural selection and its raw material. It is the evolutionary potential (on the various levels in the structure of life) that must be preserved in biodiversity (Blandin, 2009). The idea that biodiversity should be conserved because of the still-unknown potentialities enters in resonance for a number of actors with climate change issues and in particular the notions more and more common of adaptation and resilience. For both of them, resonating with the old diversity-stability debate in ecology, it is considered that a higher ‘biodiversity’ (not always well defined, but with a genetic aspect more present than usual), leaves more chances should the climate change a lot or extreme events happen. Another transversal justification relates to the medicinal potentialities of plants-as-resources, which may be existing but unknown or yet-to-come due to evolution, selection or engineering.

c) The contested concept of value

As described by Devictor and al. (2016), asking the question of the “reasons” for protecting nature leads to limiting the responses to a set of rational justifications in the form of predefined values that can be put into a limited number of categories (instrumental or intrinsic values for example). The MA as well as the GA both express that the intrinsic and instrumental values they describe are in practice mixed and that it is difficult to

really observe pure situations, without putting their classification into question. In fact, the problem isn't just that the concept of intrinsic value is mostly philosophical, and that intrinsic and anthropocentric values appear virtually systematically to be mixed, but also that they are not homogenous concepts (C. Larrère 2017) and that the constructed opposition between them is simplistic or unworkable. According to Larrère, those advocating for the intrinsic value range from the defenders of ecocentrism, others of biocentrism, and in practice some beings might be more equal than others, as the saying goes; and the concept has also been critiqued for the seemingly pureness it wants to convey. On the other hand, anthropocentrism is never absolute, but also offer a range of attitudes which do not imply that caring for nature isn't possible.

But in fact, representing values as moral ideals doesn't help to understand how they relate to the justification of specific decisions or actions. Whether it is to say that some ecosystem services have 'value' for the people living in the ecosystem producing them, or that others might translate to somehow calculable economic losses for companies who benefit from them (usually for free, and therefore sometimes interpreted as their capacity to appropriate the value produced by ecosystems), or that there is an attachment to the place embedding the said 'ecosystem', the concept of value can be more generally considered as the quality and capacity "of being measurable and comparable to other things" (Bigger and Robertson 2017). According to Bigger and Robertson, this definition "let us see how apparently incompatible value regimes flow from foundational choices about what is to be counted, visible, and present" (Bigger and Robertson 2017). But measuring is only one way of attributing a value, and what it heuristically more important is the capacity to compare different things, capacity which can sometimes only emerge following a process to render them commensurable, and therefore multiple ways of valuing things are copresent, depending on the situation and what needs to be compared, but also on the different actors and their respective and sometimes conflicting "languages of valuation". Martinez-Allier considers that within what he calls ecological distribution conflicts, valuation can be expressed either within a single standard of valuation, usually relating to ecological economics in the broader sense, or "through a contest or dispute over the standards of value to be applied" (Martinez-Alier 2002). In fact, opposing the essential instrumental or economic values to intrinsic ones prevent from investigating "how such incompatibilities are socially constituted through different measures and often reconciled in more or less violent or absurd ways" (Bigger and Robertson 2017), while claiming that lives, beings or livelihoods are "incomparable, inimitable, in-valuable is to retreat from politics" (Bigger and Robertson 2017) and the necessities to be able to translate them and render them commensurable.

d) Valuation and knowledge

Valuation can be considered as a process during which a number of facts are put in relation with related ethical, ontological and axiological issues (Chateauraynaud and Debaz 2017). The establishment of these relations implies to understand a set of facts within a context and a story, coherent with the experience that the actors have of the situation, and that will link them together in a non pre-determined manner.

Valuation opposes the Kantian separation between facts and values, that is "a repartition of the roles between science and moral in which each keeps 'its place'" (Hache 2014) and leads to consider that giving value consists in applying the current values to a set of fact presented to the 'valuer'. Pragmatic approaches consider on the contrary that, as the inquiry develops and the discussions take place, and along with them reformulations of the problems and possible solutions, the production of new facts become necessary to inform

the reflection. Those facts are therefore produced in accordance with the necessities and constraints of the problem, and vice versa. Their purpose and the ethical standpoints that relate to it become an intrinsic quality of these facts, and more generally the knowledge system to which they pertain. This redefines the relation between science and objectivity, which is not a truth but expresses the stabilization of controversies related to the multiplication of beings which become worthy of attention and of moral consideration, as well as the emergence of new information about them and therefore new concerns (Hache 2014) and new problems to be investigated. It is in this process that are also cotransformed the means and ends related to a specific problematization of an issue.

This definition of the production of knowledge is consistent with its situated character, as defined by Haraway (1988), that is a knowledge which validity and credibility depend on its context of production and use. But since this link is reciprocal, knowledge also has practical implications on the definition of the context and should therefore be considered to be performative, which “implies that while attempting to represent reality, knowledge ultimately and at the same time constitutes that very reality” (Turnhout 2018).

While, as I showed before, the term biodiversity leads to a great complexity, numerous misunderstandings and tensions, conflictual definitions and reconfigurations, “this does not prevent biodiversity actors from forging criteria, drawing up catalogues and establishing metrologies, and striving to rank problems”³³* (Chateauraynaud and Debaz 2017), as well as to argue over the accuracy of the proposed solutions. I will therefore now draw some of the ways the production of knowledge relative to biodiversity, in terms of epistemology, ontology, framing and data production, relates to transformations of ethics and valuation processes. Here ethics should be considered both as an orientation that actors may take when considering facts in the valuation process and the practical consequences drawn from the establishment of value. But the reasoning by consequences dear to the pragmatist approach is also commonly observable in the arguments developed by the actors, makes that the ethics at work in the valuation process are both preceding and the consequence of this valuation process. The idea of the following sections is not to give an extensive description of the nature of knowledge and all its characteristics but to provide a number of relevant entries that could help understanding the specific relations that can be traced between knowledge and ethics.

1.3.5 Some relations between knowledge and ethics

The questions relative to the possible ethical preoccupations and transformations that the emergence of biodiversity is reflecting, may have driven, or should drive (and considering them jointly is the aim of this research), are observable in the numerous publications that wonder which ethics are appropriate to guide “human-biodiversity relations”. For example, the French association Humanité et Biodiversité, looking to find a moral compass on which to base its actions and positions, asked: “in what way does this relatively recent notion of biodiversity - the term was coined some thirty years ago - and the various scientific and political concepts it has introduced into our vision of living nature, lead us to revisit, or even question, the 'classic' ethical concepts that had been developed in the Western world to think about the relationships between humans and other living beings³³?”*. While they expressed the hope that the term biodiversity might help to bring a

³³ *Quelles éthiques pour les relations humains-biodiversité ? Questionnements de l'association Humanité et Biodiversité, Michel Badré, Bernard Chevassus-au-Louis, Gilles Pipien, 2015.*

new dynamism in the preservation of nature, they were also concerned by the use of a concept which components are largely unknown and that may also become dominated by economic considerations.

a) Epistemological plan

Ethics toward the environment, a clumsy expression regrouping a large number of conceptualizations depending on the definitions of the reality, including the nurturing of Mother Earth, the protection of nature or the care of others among more-than-human collectives, are generally understood to have their roots in the normative descriptions of the world expressed by the great tales that are cosmologies, mythologies, religions or science. Lengthy theoretical debates that took place regarding their origins, like the one opposing the cultural materialists and the structuralists on the influence of the biophysical environment on the development of cultures and their structuring myths, as recounted both by Philippe Descola (2011) and very distinctively by Elise Demeulenaere (2017), who articulates it with the contemporary debates on the pertinency of the notion of ontology in anthropology, and the antagonist positions favour respectively the ideal structures and, contrarily to Descola, a more phenomenological approach focusing on emerging ecologies and processes, as advocated by the English anthropologist Tim Ingold (2000) and beautifully described by Eben Kirksey (2015). But, independently of their origins, transformations of the descriptions of elements of the world closely relate to transformations of ethical stances regarding those elements. In particular, and taking as an example the land ethics of Aldo Leopold, Catherine Larrère considered that there is a close link between “the scientific elaboration of the questions regarding the preservation of nature and the moral formulation of its objectives” (C. Larrère 2017). There is a relation that is made between the kind of knowledge of the nature that he produces, through scientific but also emotional descriptions, and the emergence of a moral philosophy putting a new emphasis on the array of values in nature (Takacs 1996).

There is therefore a strong relationship between philosophical environmental ethics and the scientific ecology, to which philosophers refer while also criticizing certain developments in the name of their possible “implications” (C. Larrère 2017). This is due precisely to the fact that, since studies in ecology characterize the relations between living beings and their milieu, it also redefines the position of humans and allows to draw conclusions from it, therefore making ecology a potentially “subversive science” (Shepard and McKinley 1969 in C. Larrère 2017).

While Larrère describes the problems, designed by the term “naturalism”, that philosophers see in the way Leopold links what is and what ought to be, that is a description with a prescription ‘naturally’ accompanying it, from a sociological point of view it could be considered that it doesn’t really matter whether the two can actually exist without creating a paradoxal situation. What matters is that Leopold saw this connection, that it was meaningful for him and that it was then used by other actors as a moral prism to determine the righteousness of certain kind of actions. But even if unintentional in the full extent of their consequences, scientific concepts and the work of scientists profoundly transform our relations and our ideas of our place in world, as famously did the work of Alexander von Humboldt as he led the way toward “the invention of nature” (Wulf 2015) in its ‘modern’ and ‘naturalist’ sense, or the work of Darwin which placed humans in the tree of evolution.

As the science of ecology evolves, along with its concepts and descriptions, the range of normative statements, that rest on more stable meta-values and convictions and that can be linked to the type of knowledge

it produces, also gets transformed. But these joint transformations may also seem to be sometimes led by specific values or goals, but those interpretations are sometimes critiqued as reflecting the ‘ideological’ instrumentalization of science in order to justify certain policies, as was the theory of evolution for the eugenics. This perturbation of the ‘natural’ relation between scientific theories and ethics would give reason to the philosophers, but again the important aspect is that some scientific theories may be mobilized (even in contradictory ways) to justify a trajectory of action based on ethics.

Larrere (2017) considered that for Worster and Callicott, two influential philosophers in the field of environmental ethics, a certain state of science provides content for an ideological conception of a certain idea of the protection of nature. There are no direct and mechanical “implications” of scientific ecology, not only at the ethical level but also with regard to public policies for the protection of nature, but “a bringing into coherence of a heterogeneous set of convictions and knowledge, much more than the logical consequences of a series of propositions”, convictions which can be philosophical, religious, moral or aesthetic. So, in a way, within a dualistic ontology, it is a matter of making coherence between an ontology of the social and an ontology of nature. No more that the implications are mechanical or even causal, Larrère adds that “the reciprocal adjustments in the form of linkage between specific configurations are not the only possibles”. They are therefore to be considered as contingent and the product of the work of actors who may try to pull the adjustments in a direction or another. This action of ensuring the coherence also allows overcoming the debates relating to the positions assuming the naturalness of moral or the morality of nature. Nonetheless, this coherence is not simply a relation between strictly philosophical positions and other scientific positions, but also intervenes in the way in which ethical judgments as well as techniques and dispositifs related to nature conservation are defended and justified.

b) Ontological plan

With the ever-growing space occupied by the concept of biodiversity, the term “nature” has lost some of its gloss as the privileged object of western environmental action, while being the object of disqualification and suspicion following the emergence of the questioning of the “naturalist” or “modern” separation between nature and culture popularized by Descola (2005) and Latour (1991). Nonetheless, and while it is not used in many areas, in particular by government and agencies which prefer the term environment when focusing on the questions of conservation and risk management, ‘nature’ is still a popular notion which utility and relevance is defended by a number of authors, actors and institutions. As described above, the IPBES, following the difficult crafting of its conceptual framework, also uses the concept of “Nature” because it proved to be the most consensual. For the institution, “nature” comprises “biodiversity and ecosystems”, considered to be scientific terms, and “Mother Earth” & “systems of life”, representatives of “other knowledge systems”, and is therefore said to encompass notions describing ontologically distinct (or even incompatible) realities.

Before the so-called ontological turn, and forging a concept that is up to now at the core of political ecology analysis, Macnaghten & Urry (1998) contended that there isn’t one nature but contested natures, “and that each such nature is constituted through a variety of socio-cultural processes from which such natures cannot be plausibly separated”. It can be similarly considered that there isn’t one biodiversity but a plurality of contested biodiversities.

An inquiry on the natures of the biodiversities implies questioning the ontology of life, of the body, and of the subject, thus provoking the transformation of the questions of exteriority, neutrality and objectivity. Those metaphysical and philosophical questions are obviously not new, and they are also far from being exclusive to specialist thinkers, as they are inherent to human life inasmuch as reflexivity is always at work. But the emergence of the concept of biodiversity and the discussions that followed, even if they were bringing along preexisting preoccupations and understandings of ecological relations in their widest sense, did and still do participate in reshaping the extent and parameters of these questions, and with them the notions of right and wrong, and of justice.

The problematization of ontologies led some anthropologists to focus on the relationships that human groups weave with their environment through the creation of unique collectives based on various assumptions concerning the nature and properties of other beings, the relationships that they have with them and the related necessary, possible and legitimate attitudes that they have to adopt. According to Descola (2005), specific types of ontologies are formed by the ways those properties emerge from the basic inferences that humans make about the kinds of beings populating the world and how they are linked together. Those ontologies then play a crucial role in the dynamic formation of ethics toward other beings and the environment. As Sullivan notes, “ontology as a way of ‘worlding’ suggests the parallel existence of different discourses regarding how reality is constructed (ontology), how the world and its entities can be known (epistemology), and what constitutes appropriate and ethical praxis in relation to these entities (ethics)” (Sullivan 2017). It is therefore crucial to explore those links, and especially the role of ontology, to understand the relation between the construction of biodiversity knowledge and ethics.

But this conception of the way of elaborating a representation of the milieu was already somehow present in the work of Dewey. Considering that the humans, trying to make sense of the world in their “quest for certainty”, will order the beings and things into dichotomies, classifying them by naming certain “concrete and discriminable traits” (Dewey 1929), thus favouring some to the detriment of others (Bergandi 2000). The inquiry that leads to these classifications therefore goes against the idea of the simple discovering of pre-existing essential proprieties pertaining to the objects that ought to be classified, as well as against a simple reproduction of a cultural worldview by the individuals.

The problem with considering the emergence of biodiversity and its subsequent descriptors as ontological transformations, in particular the idea there is only one ‘life’ and one ‘web of life’ linking all its components, is that it aims at reinstating a unity that doesn't allow to classify and put order in those relations, and that may therefore be useless in practice. In the same order of ideas, advocates for the reintegration of humans into biodiversity seem to bet on its performative consequences and in particular on the transformation of the ethics of responsibility with regard to our co-biodiversity versus to an external ‘nature’. This would erase the ideas of human superiority and unilateral stewardship to replace it by something closer to equality and solidarity. But the issue may be that, although possibly well intentioned, its heuristic value may be limited to resolve specific problems and, from a consequentialist point of view, one could doubt that the conceptual transformation translates into an extended reach of the arguments for the unconditional respect for life. This also relates to the rise of calls for the recognition of the “intrinsic value” of nature or biodiversity, even though what it means and its “implications” are far from being obvious and homogenous. In the introduction of the

original CBD document, the parties were already stating that they were “conscious of the intrinsic value of biological diversity and of the ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values of biological diversity and its components” (CBD, 1992). But since intrinsic values and great ontological principles have ambiguous consequences, it is other types of “values” (and in particular the economic ones for the CBD) that have been put forward when some rational basis was looked for to help orient the policies and decisions. Therefore, while ontology, knowledge and ethics are incontestably articulated, staying at a general level of description doesn’t facilitate an understanding of how they may be in some specific situations and contexts.

c) Framings and narratives

In a restricted sense, it may be considered that “framing refers to the process by which people develop a particular conceptualization of an issue or reorient their thinking about an issue” (Chong and Druckman 2007). From the psychological and behavioural perspectives, frames relate to the formulation of situations influencing the choices that an individual will make, and that often imposes themselves upon them due to their “preferences”. For example, Tversky and Kahneman (1981) considered that “a decision problem is defined by a decision frame”, which includes the options among which to choose along with their respective outcomes and probabilities of success, and are controlled by the formulation of the problem as well as “the norms, habits and personal characteristics of the decision-maker”. While giving a quite incomplete description from a sociological point of view, in particular regarding what leads to the specific formulation of the problem, they nonetheless consider that “when framing influences the experience of the consequences, the adoption of a decision frame is an ethically significant act”. Conversely, Bateman et al. (2002) considered that framing the same situation differently can influence moral judgement, leading to a classical dilemma of circular explanation. Both statements might be accurate and useful to consider under some circumstances, but they also miss the social dynamics that tie together the frames and the possibilities they give access to.

Within a more pragmatic approach, framing can be seen as the process emerging from the inquiry of a number of actors, and by which they perform reinterpretations in a particular situation, through the use of specific narratives supported and justified by a number of arguments. Because of their dependence on the context (i.e., their indexical character, in the sense of Garfinkel), they can also allow uncovering the specificity of the different contexts (the frames, which are mostly implicit) in which specific types of accounts (which characteristics can be considered as framings) emerge and acquire a performative potential, thus giving substance to the reflexive dynamics that connects them. Framings (the dynamic production, actualization and negotiation of frames), in a sense in line with an ethnomethodological perspective, can be considered as accounts allowing actors to make sense of their actions in their context. The analysis of frames, understood as societal negotiations and struggles for the construction of meaning, is thus relevant for taking into account both the importance of the context in which actors act and the constraints it creates, but also of their possible autonomy within it and of the efforts they provide to act on it. In practice, framing can be considered as the expression of the relation between a number of elements (and the exclusion of others) as well as a delimitation carried out by creating or moving the boundaries delimiting a number of parameters mentioned in the accounts.

Framings, as formulations of the interpretation of a reality which is not just a social production of reality but a situated process rooted in the tangible experience we have of it, is also a form of knowledge, since it

meaningful links a number of elements together, including causes and effects, problems and solutions. Therefore, going beyond the homogenous and stable view of knowledge, scientific facts and ontologies, a framing illustrates a specific, contingent and unstable articulation, which can be contested and intertwined into a wider controversy. As framings and reframings are carried out at different levels and in different realms through the work of actors, they can include both a change of point of view, a redefinition of the context, or a questioning of the elements to be taken into account, creating local displacements of meanings and of what are considered to be their implications. In order to analyse the circulation of knowledge, as well the related social production of ignorance in front of “uncomfortable knowledge” (Rayner 2012), another task is then is to understand what are the frames that are used, by whom they are used, how they emerged, in relation to which actors and in what contexts, and the relationship between their explicit and implicit components. These interactions can be observed in practice by focusing on the processes of interpretation, articulation, transformations, and their possible conflictual character, as well as the modifications of presentation and representation of the context, references, and objects in question. Considering the shaping of an issue in terms of framing is not to say that there would be a ‘true’ problem that is hidden or transformed through framing. Framing may or may not be conscious, instrumental or manipulatory, but it allows to see how are coherently linked different elements so that they hold together, and that different actors may consider that the ‘same’ problem actually relates to different elements in different ways, often making it a quite different ‘problem’ that ‘calls for’ different solutions, transforming in the same movement the means and ends into a renewed coherent relation.

Building on Boltanski and Thevenot, Laura Centemeri considers that “valuation is in fact understood as the result of an evaluative judgment through which agents frame a given situation in order to carry out ‘the appropriate action’” (Centemeri 2017). But the framing of a given situation is not independent from the situated knowledges that have produced over it and its embedment into wider meta-narratives. One famous example is the work of Fairhead & Leach, who first pointed the “misreading of the African landscape” (Fairhead and Leach 1996) in a part of Niger where it was believed since the beginning of the colonization that patches of forest were relicts of a much larger one while it was in fact the result of the transformation of the savannah by the local population. They later aimed at “reframing deforestation” in West Africa (Fairhead and Leach 1998) to counter the inaccurate narratives of degradation inherited from the colonizers who had claimed the poor or inexistent use of the land from the part of indigenous and local people so to justify their grabbing. Their work showed that framings and narratives of ecological dynamics and issues are not just existing as floating discourses or objective scientific facts but are directly related to the history of the fields of power and dispositifs in which they are embedded, and that their relation to their ‘implications’ has to be carefully put into perspective.

As we will see, the relations between the ethics of biodiversity offsetting and the framing of nature and conservation it relates to was also pointed out by some of its detractors, who had themselves been called upon in return to consider the “correct framing” of biodiversity offsets (see Chapter 4).

d) Data, classifications, proofs and uncertainty

Another important aspect relative to the relation between knowledge and ethics concerns the production, classification and analysis of data, in a wide sense which doesn’t limit itself to the scientific practice. This

section could be the object of a whole dissertation, in particular with regard to such a complex idea as biodiversity, and has been the life's work of many researchers. As it is not my intention, I will only try to draw a few relevant aspects useful in the context of the current investigation.

Data can first be considered as collections of signs organized in indicators (in the broad sense), and therefore as meaningful indices allowing giving sense to a given phenomenon. Building on the work of Charles Sanders Peirce, Jitdutjaaño, Sánchez & Echeverri (2020) considered, as they looked at indigenous practices of classification and ordering into a network of relation the salts produced with plants in Colombia, and which would lead them to describe quite distinctively biodiversity as the body of the “master of sexual education”, that it can be distinguished between three types of indices that are used to ‘read’ nature and find meaningful connections between its elements:

Existential indices establish a connection between two entities based on their trophic or ecological contiguity, their cause-and-effect connection, or their instrumental relationship. Symptomatic indices connect species with other entities on the basis of shared formal or sensory characteristics; from the indigenous point of view such similarities are not analogical operations, but symptoms, indications of a common origin (...). Finally, designational indices connect entities by virtue of lexical, taxonomic or mythical links; species names are attributed an ontological status comparable to the shape of their leaves or the smell of their resin; names are also indices of a common origin.*

But, beyond indices, the production of data can also be understood as a process of transformation, and data in a specific form as a moment in a series of transformations which allows isolating a specific property to make it comparable to the same property, by analogy or commensurability, and articulable with others. For Latour (2007), while there was an idea that sciences were exact reproductions of the world, in fact “They connect us, in successive stages, to the world itself, aligned, transformed, constructed. We lose the resemblance, it is true, but we gain something more: by pointing with our index finger to the lines of an inscription printed in an atlas, we can, through a series of transformations all equally discontinuous, connect ourselves to Boa Vista. (...) I can never verify the resemblance of my mind and the world, but I can, by paying the price, extend the network where the proven reference circulates, by constant transformations.”*

At each step of this transformation, or rather transmutation, relevant properties are kept in form of signs, while other potential (whether known or unknown) properties are put aside, therefore jointly producing both knowledge and ignorance. But as data, or descriptions, make reference to ‘things’, the direction taken by the series of transformation is obviously not objective, and depends on the ends that this transformational activity as means is hoped to serve, or simply as the cultural meaning associated to it.

The things then become captured by their properties, and are understood and discussed in a specific context *as* their relevant properties in this context, the idea of things-taken-as relating to Augustin Berque's mesology (Berque 1987). But Anna Tsing (2005) also showed, by taking the example of the transformation of coal into a commodity, the ingenious skills of both translation, diplomacy and magic required to make things acquire certain properties according to the variety of contexts in which they are successively taken:

All along the journey this lump is "coal." Yet at each stage it is appraised for different properties; if it will stay in this commodity chain, it must be ready to meet these varied demands. It requires not a vague and transcendent "coalness" but rather a step-by-step negotiation of the possibilities at hand – for digging, sorting, transport, and so on. It is transformed as coal-the-diggable, coal-the-sortable, coal-the-transportable, until it eventually becomes coal-the-burnable. In these shifts the lump of coal rubs

up against other participants in the chain: unhappy villagers, conveyor belts, contracts. In its shape, its cost, and its composition, coal is made in the friction of the commodity chain.

Making sense of things at a given moment by putting them in a network of relations and qualify these relations by putting forward some of their common properties and leave others aside also leads to order them and create formal or informal systems of classification. For Bowker and Leigh Star (2000), those systems are fundamentally linked with moral, ethical and political issues, since “each standard and each category valorizes some point of view and silences another. This is not inherently a bad thing – indeed it is inescapable. But it is an ethical choice, and as such it is dangerous – not bad, but dangerous.”

Pragmatically, categories and classifications are not exemplified in moments of daily life, but are tested and subject to a continuous accomplishment. Therefore, while systems of classification may relate and embed ethical preoccupations, views and choices, those may also be continuously put into question and challenged during particular activities of categorization and classification. Nonetheless, while some properties of things classified become silenced or ignored because of their non-relevance for the practical purposes of a classification system, “large-scale classification systems are [also] often invisible, erased by their naturalization into the routines of life. Conflict and multiplicity are often buried beneath layers of obscure representation” (Bowker and Star 2000).

With regards to the production of quantitative data about biodiversity, the issue of the production of meaningful indicators is absolutely central and the metrological controversies permanent, and I will come back later in greater detail on the question of the construction of indicators and their methods of calculation, and in particular with regard to environmental impact assessments as well as to biodiversity offsets, but I would like to underline here some of their relation to ethics.

Considering ideas that quantitative reductions destroy qualitative value or that all should be reduced to numerical value, Dewey considered that “both are guilty of the same logical error. Both miss the logical meaning of measurement, which is determined by the instrumental reference of quantified propositions to an intended objective consequence. Both take propositions as ultimate and complete, when, in fact, they are intermediate and instrumental.” (Dewey 1938)

Indicators are actually at the core of a tension between the accurate description of the complexity of the biodiversity and its simplification in order to allow commensurability, management and meaningful synthesis of its most relevant properties, therefore relying on the prioritization of what really ‘counts’ in the biodiversity (Maris et al. 2016). But, every time, this ‘what counts in the biodiversity’ must be put in relation to the processes in which those decisions are made, and with the different activities of the actors to put forward or acknowledge certain properties instead of others. The position of ecological indicators at the intersection of scientific, economic, political and social considerations made them to be described as “boundary-objects”, which also have to deal with high uncertainties (Turnhout 2009).

But more than just a way to make sense of the world, information and its transformations in data and classifications are also a way to demonstrate connections. Therefore, another approach to what information might represent is the purposeful distributed production by the actors of a number of proofs to support their arguments, in particular in situations of uncertainty: “While the regime of uncertainty dominates discourses and experiences, in practice actors are constantly agreeing on tangible elements. In other words, they produce

evidences”* (Chateauraynaud and Debaz 2017). To be able to produce those tangible elements, actors have to create a circulation between the three regimes of proof, which relate to the types of indices described above and which are axiomatic, conventional and phenomenological.

1.3.6 Depictions of the world and environmental ethics

a) The double-edged ethics of the Anthropocene

On the way to understand the relations between the emergence of new vocabulary, concepts or descriptions with a transformation of ethics, and to put ‘biodiversity’ in perspective, it is useful to stop for a moment on the notion of Anthropocene, this “geological era in which ‘we’ are the heroes” (Lorius and Carpentier 2013). Considering a very limited and partial history, the conceptual and metaphysical revolution that the Anthropocene express could be put into a sequence that goes from Galileo, the modern nature of Alexander von Humboldt, the first picture of the Earth from the Moon, which showed its unity and fragility, and then the ideas of biodiversity and of the Anthropocene.

The Anthropocene conceptualizes and offers a particular description of the contemporary hypermodern relationship between humans and the rest of life. This understanding of this relationship then impacts in various ways the ethics that are mobilized during choices related to preservation of biodiversity and conservation policies. Indeed, for Simon Dalby (Dalby 2016), “the Anthropocene is much more than a proposed new geological epoch that marks the transformation of the earth system wrought by humanity; it has become a contentious term and a lightning rod for political and philosophical arguments about what needs to be done, the future of humanity, the potential of technology and the prospects for civilization”.

Competing terms were coined in the wake of the Anthropocene, notably to challenge the widely critiqued attribution of responsibility to the “humans” as an undifferentiated whole and to offer other readings of the history with other implicit or explicit moral and political relations and implications. These terms are for example Capitalocene, Chthulucene, Gynocene, Ecocidocene, Thermocene, Manocene, and there are many more, some crafted very seriously to counterbalance the weight of the Anthropocene and others to deride this new fashion consisting in designating everything in the form of global epochs. Each of the terms develops a specific narrative on the dynamics that led to the current environmental degradation (understood itself in different ways) or those that should be put in place to take a new direction. Others also refuse to follow these simplistic narrativization and plea to “stay with the trouble” of a more complex reality with tentacular connections (Haraway 2016). The narratives are obviously extremely simplifying the reality, since they fit into a single word, which corresponds to a framing of the way in which certain phenomena are understood and which subsequently makes it possible to select and interpret through it other ecological facts, and therefore to guide future decisions concerning them.

These different terms intended to describe the contemporary era sometimes put forward causes, consequences, mechanisms, or designate key players when pointing to responsibilities or types of interactions (J. W. Moore 2017). They are sometimes situated on the scientific level, such as geology or economic analysis, and may have a desire for objectivity or on the contrary have an ideological standpoint, or both. They present

interpretations which are supposed to be scientifically the most accurate, be incantatory or sometimes be utopian descriptions of what should or could be, but one can also consider that they present a vision which is also political, philosophical, spiritual or even religious.

While it is not the purpose of this research, understanding fully the perspective adopted by each of the above-mentioned terms would require to study their historicity and understand the contexts of emergence and uses, who is the person describing the reality from such and such a concept (like species, genre, class, country, ethnicity, energy, etc.), to whom it is addressed, and with what objective or political content. For some North American Indigenous authors, for example, what some consider today as the Anthropocene has already existed for a long time (Whyte 2016) in the form of what may be designated as Colonialocene. The advent of this 'epoch' would have radically upset social balances and relations with non-humans, leading to a radical change in lifestyles and adaptation to the new 'climate'. The designation of the current times as Anthropocene would then be a purely eurocentric view that avoids to account for the multiplicity of worlds and ontologies (Todd 2015). Taking into account the origin of the discourses here helps understand their causal attribution logic, which obviously has a strong impact on the understanding of a situation and therefore on the means that are considered by the actors to transform it.

The interpretation of reality that the different terms propose also have a strong performative power (and their crafters often hope so). The most glaring example of this is the fact that the consequences of the emergence of the term Anthropocene on how to conceptualize and understand the relations between humans and the rest of the world did not wait for the scientific validation of the geological reality of the existence of a new era through the search for relevant evidences. The imaginary which accompanied this proposition actually produced effects in various spheres as if it was real, and independently of its truth value. This dynamic should probably account as well for the fashion craze that touched journalists as well as scientists who took the Anthropocene as their latest conceptual toy. What are then the types of relationships between the human species or certain humans and the environment underlying each of the new terms used to designate our 'epoch'? As the conceptualization of these relationships impacts the understanding of environmental and climatic phenomena, they also impact the choices relating to what can or must be undertaken. These descriptions form a system of thought, with postulates, axioms and values, and frame the reflections on past, present and future environmental issues. Accepting the vision (that is considering it as an accurate depiction of reality) of the world's relations underlined by the notion of the Anthropocene have therefore various ethical implications, which is one of the reasons why it is so contested.

The moral transformations of the Anthropocene comes mainly from the fact that it implies a double contradictory movement of separation and reintegration of the humans within their environment, movement which upsets the benchmarks on which the pre-existing environmental ethics were based and that is similar to what has been described as hypermodernity (R. Larrère and C. Larrère 2012). On the one hand, the Anthropocene humanizes nature, that is to say it transforms it into a product of human activity (and not simply as a social construct, but a material one). If the 'earth system' (when referring to the climate) or the biosphere are already completely humanized (some say artificialized), then its management as humans wish to can continue and even intensify, which may in particular justify the use of geoengineering technologies. However, despite the strong impact of certain human activities, our capacity for control is in reality uncertain, thus showing the limit of the discourse on the end of nature. What also is often forgotten in the hypermodern

discourse is the existence of dynamics wholly independent from human desire as well as of other beings with whom we share the planet and who may have moral or legal rights (R. Larrère and C. Larrère 2012).

On the other hand, it could also be considered that the Anthropocene may also involve a reintegration of the human within the terrestrial ecosystem, since it emphasizes the relations of interdependence which bind it to non-humans. Therefore, depending on the interpretations, conceptualizations, and understandings of what the reality of the Anthropocene would mean, different implications are drawn regarding 'environmental' ethics, that is the ways in which humans should relate with nonhumans and actions that are morally acceptable to perform. These descriptions and their implications then may be pulled by some actors out the scientific realm so to allow them to become the object of political disputes.

Other examples of the consequences of the acceptance of the Anthropocene as a reality on the choices concerning the management of nature and in particular the preservation of biodiversity can be put forward. In the case of conservation science, the assimilation by scientists of the Anthropocene era created what has been called ecological anxiety (Robbins and S. A. Moore 2013). They become indeed caught between a desire to do less to let ecosystems 'renaturalize' or 'rewild' themselves by isolating them from humans, or to act more intensely, considering either that everything must be done so that they find an arbitrary and fantasized original state, or else that in any case human activity will continue to impact them significantly and that they should therefore intervene in a more radical way by guiding more strongly the transformation of certain ecosystems independently of their historical evolution. This raises the question of their desirable state, and implies a normative view of good and bad with highly political ramifications (Büscher and Fletcher 2019).

These uncertainties as to the values, valuation and evaluation methods that should guide the choices relating to what it is desirable to do also contributed to the invention of ecosystem services, since this concept makes possible to relegate ethical choices to a supposedly objective pseudo-economic rationality. This option can also be justified in the Anthropocene by accepting our relationship of dependence on an already artificialized nature which would have lost its intrinsic value and which humans could therefore manage by enslaving it to satisfy their needs and protect it in order to preserve the provision of these services. The utilitarian and a-ethical aspect of this approach may then render non-humans with 'nonessential' functions dispensable.

The 'anthropocenic' ideas of the exceptional position of humans and the end of nature also relates to the ontological postulates allowing the development of approaches allowing the compensation for biodiversity loss, as it consists in thinking that we are legitimate in evaluating the theoretical equivalence between ecosystems and their interchangeability, independently of their socionatural history and by erasing the distinctions between the natural and the artificial. In its most extreme versions (or caricatures, as used by opponents), it also seems to be paradigmatic of a thinking of humans as all-powerful, since they would be able to recreate an ecosystem whose certain pre-established parameters are identical to the one that is destroyed, while minimizing the importance of all the conditions that are not mastered or possibly controllable.

The ways in which are conceived or characterized the current environmental evolutions, that is to say the highlighting of certain particular causes, such as the responsibility of the humanity, of a certain category of humans in particular, or of a type of economic or social organization, or the highlighting of the existence of certain relationships between certain beings as well as the ways in which the human and its activities within all living things, have direct consequences not only on what is imagined to be the type of actions that can have a desirable impact, or what is materially possible of accomplishing, but also on what it seems right or ethical

to do. These different definitions of reality, their respective framings and ethical consequences, are therefore part of the process of legitimization of certain types of politics. In this sense, understanding the meaning of the different analysis and proposals that are made by the different actors, including from the researchers, implies in particular to reflect on the ecological knowledge systems within which are produced the decisions made and how they are accounted for. Finally, the debates around the Anthropocene also shows the intrinsically contentious nature of certain types of knowledges (as propositions over crucial definition of the reality), and of the assumptions on which they are based, especially when they are conceptually complex.

b) The role of philosophers, and the effect of theories

While the second chapter of this dissertation will give the opportunity to focus on the role attributed or self-attributed to science and the scientists to provoke societal transformations with regard to the management, integration or care for the rest of the biodiversity, it is useful to briefly note first the role that environmental philosophers think or hope to play. For example, in an article about Environmental ethics, Larrère (2011) “investigates the main trends in environmental ethics (biocentrism, ecocentrism, pragmatism)” by putting them in context, describing them and showing the difficulties that they each pose, including the political objections, before concluding “in favour of a relational ethics (...) open to a pluralistic and democratic discussion rather than enforcing some scientific truth”. The intention is therefore to critically analyse what other philosophers have proposed when wondering how to conceive “new” or “better” environmental ethics, before offering her take on the issue by considering that it would be preferable to adopt a relational ethics.

J. Baird Callicott (in United Nations Environment Programme 1999) considers that “with the current and more ominous global dimension of the twentieth century’s environmental crisis now at the forefront of attention, environmental philosophy must strive to facilitate the emergence of a global environmental consciousness that spans national and cultural boundaries”. Baptiste Morizot (2017) wants to “forge new alliances with the land” in an article that “intends to formulate an environmental grammar in terms of diplomatic cohabitation with living beings, on a land understood as home to biotic communities”*. For Donato Bergandi (2000), the moral obligation that emerges from the crisis of the biodiversity is to look for a pragmatic ethics focusing on a set of principles that he found to possibly reconcile anthropocentric and ecocentric perspectives. This approach, allowing becoming “conscious” of the relation of the humans with the other beings, finally “would allow environmental ethics to become a real operational element in the determination of policies towards biological populations and natural environments”*.

This aim of the philosophers has been qualified of “ecogenesis” or “terraforming project”, which succeed (because obviously their success is never a given and their trajectory depends on many parameters and most of all their appropriation and transmission by relevant actors) “when a concept becomes a common noun, in the double sense of the word - a word of everyday language, polished by use. Ecogenetic concepts have contaminated minds, and in so doing have become everyday language, then calcified into things”* (Morizot 2014). But the intention of transforming the world through the generation of concepts to think it is not the appanage of the philosophers but was also present in the rest of the social sciences since their inception. This is particularly true in sociology with the refined descriptions of inequalities, for example, through the craft of new measurements techniques and analytical categories. The intention of transforming our comprehension, with critical, political and ethical outcomes, is even more pregnant with the concept of “environmental justice”.

Nonetheless, and seeing these performative concept crafting intentions through the consequentialism lens, they do not all had the same social and material consequences than, say, 'nature' or the formation of the individual subject and the legitimacy of private property.

The relation between theoretical construction and their social performative consequences is, among the other effects of knowledge on the representations of the world which are at the core of political actions, what Pierre Bourdieu called the "effect of theory". In general, this effect, "by contributing to imposing an authorized way of seeing the social world, contributes to making the reality of this world: the word or, a fortiori, the saying, the proverb, or all forms of stereotyped or ritual expressions, are programmes of perception"* (Bourdieu 1982). But, in the production of theories, sciences have a privileged position, since those they propose are claimed to be empirically demonstrable, and their link to ethic is that, by transforming the representations, a theory "makes possible practices that conform to this transformed representation"* (Bourdieu 1981).

The reality of this effect is well acknowledged, at least implicitly, among researchers (or possibly mainly implicitly due to both the feedback it may have on the credibility of scientific descriptions, which would become questioned if their self-fulfilling aspect becomes too strong or obvious, and the still inexhaustible claim of objectivity put forward by a substantial proportion of researchers which, ironically, may be the condition for strengthening the effect of theory of their theories), and this was well shown by the intentionality behind the crafting and spreading of the concept of biodiversity.

Thus, existing and circulating knowledges orient both the perception and the creation of new knowledge, and the relation of coherency between knowledges and ethics is a constant translation and intra-action between the two. It is evident that not only preexisting facts are put into relation during valuation processes, but that also ethics shape a situated understanding of the thing from which are to be made emerge new facts, in particular through the selection of specific properties and relations, provoking ontological transformations with ethical and practical consequences. Finally, following Donna Haraway's proposition that "it matters which stories tell stories, which concepts think concepts" (Haraway 2016), and that it is therefore crucial to pay attention to the stories that we use to tell stories, but also to investigate which stories are used to tell stories, and likewise for the concepts, figures and systems, it could also be claimed that it matters which (and whose) knowledges produce knowledge.

1.3.7 Evolving, processual and contested coherencies

The look for coherence, or consistency, by reciprocal adaptation between the knowledge and ethics can therefore be seen through different co-operations that intend to connect in a socially meaningful and accurate way knowledge with convictions. This relates to the description that Gärdenfors and Makinson (1988) made of the necessary revision of beliefs when an inconsistent information with a knowledge system, which had to be revised or contracted according to a prioritization based on the degree of epistemic entrenchment of the informations, that is on their importance in relation to the system itself. But it also relates to the coherence of problems with solutions, causes and effects as well as means with ends. The temporal relation that links those conceptual couples makes it necessary to also take into account their relation to the determination and expression by the actors of various "visions of the future" which, from a pragmatist and consequentialist point

of view, relates, in the present, to the “determination of the range of possibilities and the angle of desirable futures, but also of cognitive and practical holds on the world”* (Chateauraynaud and Debaz 2017:21).

This process of rendering coherent is seen for example by some actors in the convergence of economic practices and a particular view of the dynamics of living beings, which could be in the current context a capitalism putting forward the adaptability, flexibility and perpetual innovation with a fluid and dynamic representation of the relations between living beings and their milieux (C. Larrère 2017). This idea of coherence is also very well demonstrated with the idea of ‘biodiversity’ in the fact that, as expressed by Toepfer, it “fits very well into our pluralistic present because the concept renounces an overarching, universally valid (world) order and expresses a de-hierarchization and pluralization of perspectives. It refers to the heterogeneous interests and intrinsic worth of every single individual. With respect to human and non-human living beings the concept of diversity is successful, because it conveys respect and responsibility, tolerance and pleasure of heterogeneity.” Of course one could argue that talking about a “pluralistic present” that would parallel biodiversity is not only simplistic but mostly representative of a specific political perspective and desire, but it does seem to fit at least the “present” of those who seized the apparition of the notion of biodiversity as an opportunity and promoted it as something that would not only promote the conservation of nature as well as a vision of it that would fit their views, but also as something that would reflect and promote their ontological standpoint and ideals with regard to human societies. This was already forceful in the naturalistic classification of Karl von Linee (its “sistema naturae”), which created a relation of coherence (or isomorphism) between the hierarchical and royalist social structure with the natural order it revealed (in the animal kingdom, the vegetable kingdom, etc.) and which was said to retroactively demonstrate that the royalty and its related social organization was natural and not arbitrary.

The cotransformations of the processes of valuation and the forms of ecological knowledges is well represented by the tentative aim to stabilize descriptions and measurements of ecosystem services, without which nature remain invisible and the goal of making a market unattainable (Tordjman and Boisvert 2012). Indeed, as Robertson (2006) showed, their markets need stable spaces of calculation that scientific are requested to provide in the forms of uncontroversial metrics which would successfully “describe a nature that capital can ‘see’”. This effort is nonetheless frustrated by the undisciplined data produced during the assessments and which require sustained efforts from field technicians to be stabilized and rendered meaningful in economic terms.

For Chateauraynaud and Debaz (2017), a space of calculation “can be objectified but, to produce performative effects, it assumes an isomorphism between the informations treated and the mental space activated by the agents”*. Conversely, as the performative effect of ecosystem services become observable, as it “is starting to become naturalized: we are beginning to view and enact nature differently, or rather, we are enacting and living in and with a different nature, one that is increasingly seen to be made up of ecosystem services that are in need of management, conservation or exchange” (Turnhout 2018), a new coherence is built between certain descriptions of nature and the frames they relate to³⁴. In turn, the performativity of certain

³⁴ In order to clarify the relation between the concepts, it could be considered that a space of calculation is not a frame but is supported by a frame in the form of a narrative and defended through argumentation. Therefore it coincides (or goes along with) with a regime of discourse, the two of which have also to be put into coherency. A space of calculation, sustained by an isomorphic (mutually put in coherency) regime of discourse, is premised on a number of axioms (in the form of hypothesis and statements) which forms the knowledge system within which it operates. Those axioms relate to

spaces of calculation, along with the specific governance logics that they favour, also “attracts and privileges certain groups of actors [and] also inevitably exclude other actors and other governance logics” (Turnhout 2018), leading to contestations and conflicts aiming at achieving transformations of the institutions.

1.3.8 Ethical and valuation conflicts and transformations

For Graeber (2001), value emerges from the moral, semiotic or economic comparisons that are performed. Bigger and Robertson consider that “this process-oriented understanding reminds us that nothing, be it cultural or natural, is intrinsically valuable; value is found, affirmed, realized, or destroyed through ongoing social performances of comparison and measure. Those performances assess moral value when they compare things against how they ought to be, they assess semiotic value when they use comparison to distinguish between different objects, and they assess economic value when they compare things for the purpose of exchange, often denominated in units of money” (Bigger and Robertson 2017). But the standards and languages of valuation emerge because of a specific situation, a specific ecological distribution conflict or controversy of which the actors are part of (although obviously the 'situation' is defined differently by the actors, and they are actually not part of the same situation, and a part of the conflict is to get, persuade or force others to 'be' in the situation as it is presented).

The same way identity politics emerged as a form of strategy in front of ecological distribution conflicts (Martinez-Alier 2002), knowledge politics (and ignorance), or valuation, are distinct possible ways to put forward interests. Ethics are also only one aspect or possibility of the languages of valuation (which is actually what are the facts put in relation with, the relation being the argumentative support of the valuation). These ethical languages can therefore be considered as a specific type of "account" of the value, that are situated and related to an audience.

For Martinez-Alier (2002), “any social group can use simultaneously different standards of value in support of their interests”. But the simultaneous use of a plurality of languages of valuation do not have to relate to different interests, since it may sometimes be necessary, and absolutely not incompatible, to mix them in defence of a specific struggle. For example, the utilitarian biological value of an area for a species of bird, which ultimately should be preserved because it has the right to life or is sacred. The ethical and incommensurable description of the bird value may lead to instrumental reasoning of how to preserve it, which combined form a coherent ensemble of ends, ends-as-means (or intermediate ends) and other means.

Valuation, considering its relation to ‘facts’ and knowledge, is therefore also relational as well as situated and occasionally opportunistic. It is not about applying a predetermined value or set of values to a problem, but to produce an argumentation following an interpretative activity of a specific situation, in order to render it meaningful, redefining in the same movement the definition of the situation. This means that valuations go way beyond and precede what could be within the field of ‘objective’ evaluations. In this sense, valuation

the epistemological, ontological and axiological plans, and their disconnection from the experience of some actors can lead to their qualification of being ‘detached from reality’, which could be related to what Chateauraynaud and Debaz (2017) call an autonomous axiomatic. (a famous example is what is described as the financialisation of the economy, which is considered to be more and more detached from the ‘real economy’, leading to absurd transactions). Those axioms means that then the situation is considered "as if" this and that were true, and therefore that a number of things are "taken as" – Augustin Berque's "en tant que" (Berque 1987) – the specific and situated description that is made of them.

doesn't just produce a value but a value along with the space of calculation of this value. This space of calculation, in the sense of Chateauraynaud and Debaz (2017), is the "set of data, procedures, concepts and reasonings shared by actors to produce coherent interpretations within a common assertoric space"* and on which they rely to elaborate strategies and put forward their interests. For Funtowicz and Ravetz (1994), "to choose any particular definition for value involves a decision about what is important and real³⁵; other definitions will reflect the commitments of other stakeholders" or, we could also say, of other carriers of cause, or the translators and representatives (self-assigned because of their ethical positions or pragmatically because it is also linked to their own interests) of the interests of other beings. Some actors and academics might even consider that "the ultimate stake of politics (...) is not even the struggle to appropriate value; it is the struggle to establish what value is³⁶" (Graeber in Bigger and Robertson 2017), which lead to consider the procedural power of institutions to impose, legitimize and naturalize a space of calculation that will frame the definition of value and the way to evaluate it.

Considering the legitimacy of languages of valuation in terms of space of calculation organizing the definition of value represents to a shift from intra-politics to inter-politics, that is the rise of hegemonic assumptions about the nature of value and therefore the removal or neutralization of what would be otherwise considered uncertain, debatable and subject to agreement. But spaces of calculation are not abstract nor rhetoric, and their performativity also is directly linked to the materiality of their measurements and procedures, and have direct relations with (and consequences on) concrete ecological distribution and possibilities to sustain a livelihood, and are therefore also extremely tangible and are experienced. This is for example strikingly visible with the reasonings in terms of private property, which has such overwhelming material and direct consequences over ecological distributions. A space of calculation therefore relates to the situated definition of the political and of its edges. But it also relates, in environmental economics terms, to the definition of externalities and to what Martinez-Allier defined as cost-shifting successes (Martinez-Alier 2002:257). Considered in the wide sense of 'cost', that is relating to all types of values, those cost-shifting successes can therefore be understood as well as the production of valuation boundaries.

Actually, processes of internalization and externalization can be defined in two different ways: one is narrow and relates to its most common economic sense, while the other is broad, and refers to "political processes and institutions for expressing and resolving or accepting conflicts over environmental concerns" (O'Connor and Spash 1999). But, as stated earlier, the two are not happening in different universes, but are put in constant tension between the actors, and can relate to the struggle for the displacement of the terms of the conflict between inter- or intra-politics, that is between a frame of discussion with a pre-established space of calculation and one which assume the uncertainty of the translation processes and refuse to foreclose the nature of the objects in discussion.

While controversies are typically happening at the intersection of epistemic logics, axiological positions and ontological worlding, some actors may also want to reject the possibility of calculation (Chateauraynaud

³⁵ The problem of definition of the real relates to the position of Escobar on ontologies. But one should probably be careful when using such a notion as the 'real', because it could let think to easily that it is a stable interpretation of the properties of the world. Actually, while taking its roots in the experience, its explicitation only happen in terms of 'accounting', that is according to a specific context and audience and for a specific purpose.

³⁶ The original quote is actually more complex, since David Graeber consider this view of values embedded in "politics of value" as being the position of Terry Turner who he considers to be a libertarian marxist opposing the extension of the all-encompassing market. (see Graeber 2001:88)

and Debaz 2017). Nonetheless, when relating to calls for the recognition of intrinsic value or of a fundamental incommensurability, this rejection may not concern the process of valuation itself, but is rather a rejection (because of its dangerous implications) of the fixation of the valuation in the form of a stable, objectified, formalizable and inter-political space of calculation. What appears as calls for the recognition of incommensurability could thus actually refer to the fundamental indeterminacy of the processes of commensurabilisation.

Far from being stable, the relations described above are on the contrary at the core of non-linear transformation processes. They are transformed through argumentation processes but there are also other change drivers: events or tipping points, infrastructures of discourse production (sensitive and physical world) or counter-discourses emerging in the multitude of milieux. Interestingly, for the IPBES, and as we will further see in the next chapter, the values relative to biodiversity they describe have been observed to change in the ‘wrong’ direction due to migrations, globalization or climate change, which are therefore direct material transformations, while they hope at the same time that changes in the ‘good’ direction may occur on the basis of the realization of scientific facts.

While imaginaries, grand and small narratives are privileged objects and fields of political action, they are not just existing as floating discourses, but are directly related to the institutional, infrastructural and material devices in which they are embedded, since they are coproduced with them to 'account' them, in the sense that they explain, justify and give them meaning. They are therefore subjected to tensions and contradictions between their homogenization and the multiplicity of experimentations which lead to the emergence and multiplication of variations, often relating to issues of scalability (and in particular of non-scalability, as pointed out by Anna Tsing 2012) challenging the theories of change elaborated by the actors.

Finally, the relations between knowledges and ethics are the place of impositions, contestations and frictions, and pragmatic sociological approaches focus on understanding the dynamics of transformations that never stops occurring through the interactions of actors' actions and socionatural events and constraints. It would not make sense of trying to wonder “what is the ethic of the society” or even of a specific instrument or group. The ethics mobilized are by definition multiples and often contradictory, not only because of the contradictions, incoherences and tensions that go through and through actors and groups and that they try to resolve through a number of strategies, but also because of the variety of processes, contexts, and milieux within which they are continuously reshaped and actualized.

1.3.9 Examples of the relation between knowledge and ethics in the case of species and their functions

Before entering more deeply in the subject in the next chapters, I will give in this section a couple of short and specific examples that should allow to have a first glance at how the descriptions and interpretations of situations generate or aim at generating transformations or reconfigurations of the spaces of calculation within which ethical judgements and valuation processes should take place.

a) Ecosystemic functional redundancy

The first example that I wanted to put forward focuses on the links between the emergence, use and implications of the concept of ecosystemic functional redundancy. This concept is based on the idea that ecosystems are formed by a web of relations and that within an ecosystem a number of species and their individuals may fulfil the same ‘function’, in particular with regard to their place in the trophic network, that the food chain through which circulate energy and biomass. Therefore, the stability of an ecosystem could be maintained even in the case of the disappearance of a species as long as there exists other species which may equally fulfil the function that the disappeared species was fulfilling within the ecosystem. For Patrick Blandin (2018), a first issue with the notion of functional redundancy is the vagueness of the type of function that it refers to, and that its use should only be limited to a very specific function. For example, while some predators may equally feed themselves on a number of species, which would therefore have for them the same function, it doesn’t mean that they only have this unique trophic relation and that they do not differentiate from other functional perspectives.

But the importance of a specific function also relates to the different hypotheses that exist with regard to the role of species in ecosystem functioning, among which are: the hypothesis of ‘diversity-stability’, which links the diversity of an ecosystem to its stability; the ‘rivet’ hypothesis, which considers the redundancy of some species by also their specialization; the ‘drivers and passengers’ hypothesis, which separate essential species from the superfluous ones; and the ‘idiosyncratic’ hypothesis, which postulates non-predictable relations between species diversity and functions. The first two hypotheses therefore give a distinctive importance to the idea of redundancy, while the others do not consider that it exists (Lévêque and Mounolou 2007), therefore showing that the concept is itself taken into a consideration over the nature of the relations between species in an ecosystem, relations that are themselves often qualified normatively by referring to ideas of competition, symbiosis, predation or parasitism, among others.

Blandin (2018) considers that the desire to put in order the web of relations among species “is at the heart of an essential problem: how to define and recognize the irreducible identity of each species, and at the same time try to classify species into 'functional types'? The problem is not only scientific. It has ethical implications, because it involves the question of the intrinsic value of each species and that of the 'substitution value' of a species, by which is meant that a species would be all the more valuable if it were more capable of substituting itself for others”*. According to this type of reasoning, the question of the “value” of a species becomes the one of its irreplaceability, and it may be high if it is irreplaceable or, conversely, a species could be deemed of low value if it was easily replaceable, useless for replacing others or with no apparent “function” within the ecosystem — all this by considering that the set of functions (or the one function) performed by a species exists (or that it means something) and could be identified. This example therefore shows the coherency that is created between a specific perspective on value, here considered as the function of a given specific species within a given ecosystem and the space of calculation which would allow its (e)valuation, and the ethical consequences of looking at species *as* their supposed functions and the existence of redundancy.

These views could be considered to be purely utilitarian, but not only that doesn’t free them from ethical concerns regarding the consequences, since other ethical considerations permeate the conceptual design of the type of “function” or “utility” that a species may provide to the system. It is therefore not enough to say that a

reasoning or value is utilitarian, since what matters most is to know of what kind of utility, for what (and ultimately who) and under what circumstances and consequences, and starting from which postulates.

b) Manatee conservation in Colombia

Following the preceding example focused on an aspect of ecological theories, this one presents a more concrete problem, which is the conservation of the manatee in Colombia, through the descriptions by a biologist of its understanding of the relations between the characteristics of the manatee, its ecosystem and the local populations and the consequences he draws from them for stimulating and achieving its conservation.

In the brochure *El manatí, jardinero de los humedales*, edited by the Corporación Autónoma Regional del Canal del Dique (the environmental authority of the region of Cartagena) in 2017 about the manatee, an herbivorous aquatic mammal, the author, the biologist Sergio Medrano-Bita, tries to understand how it relates to humans as well as the challenges of its conservation. More interestingly, he also tries to describe the possible arguments (or the lack of) and find the right strategies, depending on who is to be convinced and mobilized, and drafts along the way its vision of the relation between the two.

He first describes the manatee as an organism with its physical and biological characteristics before describing its behaviour and its geographical distribution in Colombia. He then moves to sections about its “importance”, an “history of its usage”, the threats it faces and then concludes by propositions for its conservation. The general idea is that for a number of reasons, and in particular because of losses of habitat, it is threatened as a species, and the text shows that the author considers that it has to be preserved, not necessarily because of its intrinsic value but simply because he’s a conservationist and therefore thinks that it is right regardless of specific reasons. For example, he describes the fishermen who consume it as having “an environmental education different from the one proclaiming that it should be conserved because that’s the way it should be”, the difference being that their environmental education is “traditional” and therefore oriented toward survival.

While he says that the manatee is essential for various reasons for the wetland ecosystems it lives in (or belongs to), as expressed by the “academic ecologists” as well as by “fanatic animalists”, he states that the main reason why this hasn’t been sufficient to generate strong conservation policies is that “in the regions where the manatees live, the communities do not see them, feel them, hear them, they aren’t “useful” and there isn’t frequent news about them”. They therefore “can’t even serve as distractions”. Besides this invisibility, the author, seemingly trying to find an argumentative grasp, reports that, apart its occasional consumption following rare opportunistic catches, it isn’t used in magic rituals or spells, nor they are used as pets, “for obvious reasons”. Also, he doesn’t believe in the rumours saying that they’re used in sexual rituals.

The author is therefore trying to articulate the characteristics of the manatees with their ecosystem as well as their social existence for the humans, whether the relationship emerge from the experience by a recognition stemming directly from the senses and its “uses” (consumption, medicine or distraction) or indirectly through communication networks. But the qualities of the relationships also depend on the particularities of the human conditions, because their importance for the ecosystem “do not help much when trying to present them as benefits that could help them be saved from extinction, as poverty, inequity and other issues of survival are predominant in the human communities that interact with them, leaving aside the discourse of species conservation”.

As the manatee is considered socially useless and invisible, and that it is therefore outside of the society, when considered as the result of the worldling processes, some experiments have aimed to (re)incorporate it. He says that a number of studies aimed at “positioning” this species as an “emblematic species”, but considers that they’ve failed because “the sentiment of belonging and interest hasn’t been anchored in the communities where the concept of manatee conservation is pretended to be rooted”. On the other hand, while the author thinks that there might be potential in putting an emphasis on the fact that the manatees share with the humans the quality of mammals (without going into the details of the reasons or successful experiences regarding why that would matter), he also fears that this would imply an implicit acknowledgment that non-mammals matter less.

He concludes by advocating for a “solid policy” designed by a conjunction of actors as well as the community:

The communities alone are not going to protect the manatee just because they are called to meetings, workshops with snacks and lunch, and are made to constantly repeat that the manatee is useful, unique and must be conserved because they clean the wetlands of excess invasive vegetation. Delivering colouring booklets and staging fictitious manatee "parties" that only take place while donors and organizers are present also have little effect. (...) In order for a wild species to survive and benefit from adequate protection, in addition to having state conservation incentives (primers, trainings, workshops, etc.) it must generate some tangible benefit in the social dimension that makes use of the good of biodiversity, and in the case of the manatee, this species does not meet this requirement, contrarily to the babillas iguanas, ponches, ducks and other birds and mammals that are taken advantage of on a daily basis. Therefore, it is recommended that manatee conservation programs be integrated into macro-projects for the recovery of wetlands, where their habitat-environment is conserved in company with other species of use.*

Hence for the author there’s little hope in helping the conservation of the manatee by creating artificial relationships between them and the community. He nonetheless evokes and looks for a variety of possible connections within a range of modalities, but finally consider that the relationship doesn’t exist and will likely not exist because the manatee, in its essence, doesn’t meet the criteria of “giving tangible benefits”, and in particular it is not commonly or ‘sufficiently’ eaten. Even the evocation of the rumours of sexual rituals proves that a kind of mythology exists, and that stories about the manatee are told. But the author, possibly too quickly, rejects the rumour as a proof of relation because it isn't proven, without considering that its very existence expresses that the manatee has a social existence within the imaginaries of the population.

The operations carried out by the author can be taken as an example of an actors’ sociology of environmental moral and of its tentative articulation of knowledge and morality via specific modes of representation of relations between beings or ‘existing ones’. The author starts from the principle that the manatee must be protected without really revealing why he considers so, but above all he tries to find the arguments that might transform the values that he considers that the people who live around the manatee have. He is then the example of someone who seems to take as a fact that something must be preserved (in a way), and who has the will and the interest for this to happen. He therefore tries to convince by finding and crafting “arguments”, that is to say by the translation, narrativization and contextualization of ‘facts’, the relations between these facts, as well as between these facts and the people to be convinced. The idea is to create an appropriate story, or a description of “what’s *really* going on” , so that relevant arguments might reach the targeted audience. He considers the knowledge he could convey and what he thinks to be its impacts, and then

its articulation with social realities and the work necessary for the articulation to become a tangible reality and not just principle or symbolic (although the symbolic can be very tangible).

The text therefore makes variations on the possibility of wanting to preserve the manatee, either because it is close to humans, or useful for ecosystems, or for its intrinsic value. But it concludes that overall these arguments are not sufficient in practice and that to preserve it effectively it would be necessary to convince people that it is in their best interest to do so. The problem is that the author considers that the manatee doesn't seem to be of much tangible interest for the populations (that is that he failed to find a relatable and commensurable value), and that therefore it better be included in larger conservation programs focusing on the mangroves.

For the author there is a strong opposition between his conservationist values and the “environmental education” that prevails in the communities, which is solely based on an ethic that links direct nutritional benefits and preservation, without accounting for the benefits for the ecosystem as he does. This view nonetheless has to be put in perspective with the fact that the author acknowledges on one hand of the specific conditions of the communities, and on the other that the main problem is the loss of habitat, which has to do with issues embedded in much larger temporal and geographical scales (in particular colonialism and extractivism).

1.4 Conclusion

This chapter showed that the concept of biodiversity can be considered to have emerged from both a scientific need and a desire to reconfigure the knowledges about the nature of the living world and the relations between the beings that populate it with an explicit ethical and political motivation. Nonetheless, while it transformed those knowledges in many different ways, their ethical implications are not as straightforward as some actors would like it to be. The fuzziness of the concept allowed it to be adopted by a large variety of actors and institution which, despite using sometimes a common definition, do not at all translate it in the same ways depending on the milieux and situations in which they have to relate it with their experience.

On one hand, it could be considered that human societies always ‘cared for’ their ‘environment’, in the sense that they had preoccupations toward other beings part of their life’s milieux, preoccupations which were translated into desirable specific actions and regulations. On the other hand, the nature of these attentions depended and depends on the type of both ideal but tangible realities in which humans have been considering to be living in, and that are often described by the terms ‘nature’, ‘environment’ and more recently ‘biodiversity’. Regularities and historical tendencies can certainly be observed but, if we leave behind the idea of homogenous and stable human societies or groups, these realities, as propositions used as an explicative notion (Escobar 2018), emerge from experiences and the narrations of their shared understanding. In turn, the notion of the real is intimately linked with the possible and the political (Escobar 2018), and therefore with ethics. Indeed, the knowledge that is elaborated by actors through the variety of their experiences is not neutral but is driven by an interest, a curiosity, and produces attachments, as had already well felt and described Aldo Leopold.

Elements of this reality are incommensurable as such, that is independently of the social recognition of their existence. They must first be designated, be given a name, make emerge some of their properties (that is

giving them social density and understanding them as signs) and then link them together in an attempt to find ways of commensuration. Commensuration possibilities, as part of larger knowledge claims, therefore appear as a sort of intra-political negotiation or diplomacy, through which comparison, valuation and hierarchisation are deployed. They are then validated by the linking and articulation of regimes of evidence, evidences which are themselves tested and challenged by the very possibility of these articulations.

The present research put emphasis on the fact that ethics are not abstractions that are floating above the actors or social groups and that can rationally be applied to the situations that they encounter and which call for their judgement. This judgement, although informed by a variety of knowledge types but subjected to what remains unknown, is the conjunction in the same movement of reasoning and feeling or, as Escobar calls it, a thinking-feeling with the Earth (Escobar 2016). This perspective, inspired by the epistemologies of the South, confronts what could be called the epistemology of above, that is of the modernity, relying on universal science, objectivity and rationality, and which imposes itself on groups expressing divergent ontologies but that also represses and denies the knowledge value of the empiricism of the experience as well as the co-construction of meaning put forward by more phenomenological approaches. Therefore, those judgements could also be understood as the situated articulation of knowledges, in various forms and the temporary result of a chain of transformations, intra-acting with a number of ethical preoccupations, which may be diversely explicit and contradictory, so to reach a degree of coherency which may allow forming an argument.

There might therefore be difficulties with the fact of considering biodiversity as a new ontological paradigm transforming ethics unilaterally. More-than human collectives are also not a given data which is stable and homogenous, but part of political processes and linked to what is taken into account as legitimate and relevant knowledges, regarding the nature of the other beings and of their relations, with which intertwine in unpredictable ways with ethical preoccupations. Nonetheless, I would argue that what is important is not to consider what the actors should do if they were *really* considering the metaphysical consequences of the notion of biodiversity, but how they effectively draw some consequences out of some of its specific characteristics and leave aside others, and how this translates into specific material arrangements. Beyond the value that has or should be given to nature (by philosophers or other human sciences struggling with their own states of mind and whose reflections may or may not inspire their peers and the rest of society), the focus shouldn't be the multiplicity of created ethics, but how these named ethics might serve as argumentative support to influence or account for specific decisions. The following chapters will therefore focus on the ways actors account for and make sense of the choices they make and the relations they perceive, on the joint transformation of ethical discourses and practices said to relate to those discourses, and on how do attempts of achieving coherency between those are translated between and through various contexts, milieux, scales and dispositifs.

CHAPTER 2

Keeping science, politics and ethics in equivocation: the case of IPBES and the discussions of the Global Assessment

2.1 Introduction

This dissertation is based on the premises that knowledge reconfigurations happen jointly with the other more sensible or moral aspects of our means of grasping the world and of giving it meaning. Therefore, the production of knowledge can never be fully untangled from its epistemic premises and its political and ethical connections, in particular in the form of ongoing knowledges-convictions struggles for coherency. In this regard, the intergovernmental scientific bodies on climate change and biodiversity, the IPCC and the IPBES, in their quality of “science-policy interface” that aim at providing “policy-makers” undisputed policy-relevant facts, are privileged places to observe the processes of negotiation of these co-transformations.

Indeed, research on the development of the IPBES as an institution showed the high uncertainty that surrounded its design and the functions it would assume (see for example Charvolin and Ollivier 2017), as well as the discussions that took place for the design of its “conceptual framework” (reproduced and described in the previous chapter). Indeed, as this framework aim to represent with a few boxes and arrows the relations between humans and “nature” in a “highly simplified” format, an approach satisfying the diversity of actors involved about such an ontologically complex subject had been particularly difficult to find. In their well-named article *Framing global biodiversity: IPBES between mother earth and ecosystem services*, Borie and Hulme (2015) showed how the final framework developed to become a “stabilization device” aiming at resolving the contradictions and conflicts that emerged during the first years around the different incommensurable framings of the human-nature relations, especially when nature is associated with biodiversity. These tensions have also been reinforced by the disputes which were taking place around the same time about the marketization or calculability implied by the use of the concept of “ecosystem services” (Chateauraynaud and Debaz 2017). Another important difficulty encountered on the way was relative to the nature of the “science-policy interface” that the IPBES aimed to become and its inclusion into a number of

diverse narratives (see in particular Borie and Hulme 2015; U. Brand and Vadrot 2013), each of them carrying a number of assumptions on the nature of the possible and desirable relations between science and politics.

Extending those discussions by taking a distinctive approach, this chapter focuses on one hand on the processes through which participants to the IPBES discuss, modify and validate a document which will serve as a reference on the state of biodiversity at the global level and, on the other, on the expectations that this report bears. The primary material on which this research is based consists in an ethnographic fieldwork carried out during an IPBES Plenary which allowed to observe the discussions occurring about the final redaction, in both senses of editing and censoring, of the summary for policy-makers of the Global Assessment produced by the IPBES and published in 2019. The account made of those discussions shed light on a collective process in which governments discuss and influence the content of what will be subsequently labelled as a “scientific report”. The analyses put emphasis on the types of modifications requested and the arguments supporting them, the role of the different types of actors and the procedures to organize their interactions, the criteria used to distinguish facts from political statements, but also their attempts of reconfigurations and the constructions of grasps to move the lines and make sense of them. I finally address what is implied by the expectations expressed by the actors that agreements on facts should lead to new moral responsibilities which should themselves translate to actions, and focus on the nature of those translations.

2.2 Ontologies of a science-policy interface

The existence of a relation between knowledge, whether scientific or not, and environmental ethics is put forward in many ways by the actors, although often unidirectionally, as if ethics weren't themselves shaping the understanding of the descriptions of the relations between diverse beings as well as the production and acknowledgement of certain knowledges. By contrast with what the general description of the IPBES implicitly let think, the “science-policy interface” is far from being unidirectional. Although the term “interface” does not imply a specific hierarchy of the terms, the concept is much more oriented toward a flow from science to policy than the contrary (and it could be argued that using instead the term “policy-science interface” would not be understood in the same way, proving the importance of the order of the words). Of course, it has already been shown in a variety of contexts the contingency of scientific production and the dependence of what will be produced as “science” to the political orientations and the culture of the scientists (see for example the classic Latour 1987), but this relation also works bidirectionally (assuming the poles are actually distinct). Here, the particularities are that on one hand politically nominated bodies (the representatives) will negotiate to decide specific directions for scientific research, which often happens when governments ask for specific investigations to resolve particular issues or to develop specific technologies (like the research on particular illnesses, or on artificial intelligence), but not so often at an intergovernmental level. On the other hand, and this is much more distinctive, the same set of government representatives will then review and ask and negotiate changes to the text that has been written by scientists.

Something similar to this surprisingly explicit blend of cultural views and science took place during the elaboration of the IPBES framework, in particular regarding the choices for particular notions and concepts to designate the “nature” as well as the types of relations that human beings have with it (see Chapter 1). By trying to expand the types of knowledges that it considers beyond the frontiers of what enters the mainstream

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

scientific paradigm and its particular views of the world, the IPBES questions the universality of science, while nonetheless relying on its methods and concepts to assess the validity of other types of knowledges.

In the science-policy interface that the IPBES embody, “policy” isn’t political but managerial, which may be why actors think about the translations as being automatic (or that they should be). In this sense, this “science-policy interface” could therefore be understood as being very “normal”, by opposition to what is referred to as post-normal. The Summary for Policy Makers (SPM) is, as its name indicates, produced for the policy-makers, that is not for the rest of the politicians and not for the society in general. This environmental management approach is also what allows scientists and politicians to find a common language in a discussion about biodiversity associating both descriptions and prescriptions (Charvolin and Ollivier 2017).

The idea of interface has been said to correspond to exploration phases, by scientists opening the possibilities regarding what may be taken into account, which are then foreclosed by political phases which must make the decisions to fix a certain state of certainty (Charvolin and Ollivier 2017), forming what has been called a “trade-off” between knowledge and public decision (Larigauderie and Mooney 2010). But those institutions are also the expression of the intensifying tensions and movements between the depoliticization of politics and the politicization of science. For Pellizzoni (2011), “scientific expertise is sucked into the dynamics of contentious politics (...). Facts gain political salience in a different sense from the traditional understanding. Rather than an excessive technicization of politics the issue seems now the opposite: the politicization of science.” The IPBES by definition cannot be either a political or a scientific body. But talking about interface is also quite misleading, as it is in fact an intertwining of science and politics. It is not between the two but a place of their explicit intersection and coproduction. It is the politicization of science and the scientization of politics at the same time, explicitly.

Therefore, at the opposite of what an “interface” brings to mind, that is the mean or point of connection between two clearly distinct and distinguishable objects, areas, subjects or systems, those bodies are at the forefront of a hybridization where it would be very difficult (and in many aspects meaningless) to try to distinguish the frontier between two elements. In this sense, the interface is not a simple place of interaction between science and politics, but a process of intra-action (Barad 2007) coproducing and transforming both elements. What seems to make those institutions truly paradigmatic of the “constitution of the moderns” (Latour 1991), is the tension that crosses them right through between what Latour called the “translation” between things and beings ontologically different, creating hybrids, while at the same time “purifying” again and again the ontological areas distinguishing humans and non-humans, which is another way to express the distinction between culture and nature, as well as facts and values, and ultimately in this case science and politics.

During his last speech as the chair of IPBES, which was also the closing speech of the Plenary, Bob Watson recounted, as a joke but also sincerely, that the biggest issue encountered at the foundation of IPBES to find an agreement on its status had been overcome by a suggestion of Mexico to use a language that was so ambiguous that no one could really oppose it. He then concluded the anecdote by defining politics as the art of expressing an idea in ways that everyone can think it represents their point of view while it doesn’t represent anyone’s point of view³⁷. This pun can be seen as simply funny and made to have everyone in the room agree over the characteristics of caricatural politics, that is of the type that everyone can denounce while hoping they

³⁷ During the discussions on paragraph D8, and as described earlier, he also said that “The art of politics is to find words everyone can agree with, even if it says the same thing in different ways”.

do differently. It nonetheless also raises questions about the nature of the other types of documents produced by the IPBES and approved by the Plenary, like the SPMs, if they were to be considered as a product of political negotiations of the type described by Bob Watson. If it also uses at least sometimes ambiguous language so to please everyone, then everyone might also be able to interpret and draw the ethical consequences it pleases, while portraying at the same time a strange picture of the institution and of scientific statements. This view of politics is quite common, especially in diplomatic relations in the broad sense, but much less openly acknowledged for discussions that claim to be of scientific nature, or bounded by scientific rationality. But understanding the interface as a process of translation could allow relating it to the descriptions made by Eduardo Viveiro de Castro of Amazonian inter-groups dialogues through “methods of controlled equivocation”, which do not aim at foreclosing translation processes. And while this translation would have to happen between different positions, it would also have to occur between science, politics and ethics.

For Toepfer (2019), the capacity of the discourses around biodiversity to hybridize renders biodiversity “a useful political concept, but it also stands in the way of any precise argument. Good intentions and positive effects connected to the concept cannot replace differentiated ethical reasoning. The important integrative function of the concept needs to be complemented with arguments in which the hybridization of facts and norms, of science and values, of knowledge and wonder is carefully separated again”. But actors do not always agree about the distinction between what is scientific and what is political. Therefore, the “purification” process isn’t always consensual and can become the centre of controversies. For this reason, it is obviously not the privilege of the researcher to put some order in the arguments of the actors, but the attention should be directed toward the effort that they may undertake in order to move the implicit line dividing the two by arguing during public debates that this or that aspect is factual, or to the contrary that “views” on the subject is what matters most.

2.3 Fieldwork during the IPBES 7th plenary

The seventh plenary session of the IPBES took place in Paris between Monday, 29 April 2019 and Saturday, 04 May 2019. The IPBES had evidently already a place in the scope of my research because of its importance in the novel global biodiversity diplomatic arena, since its aim was “to raise the profile of biodiversity and ecosystems to the same level as that of climate change” (IPBES 2019b), and its influencing work on the search for a consensus on the variety of ontological definitions of “nature” as well as on its tentative redefinition of a “science-policy interface”. This plenary, which functioning and goals weren’t totally clear to me, as I hadn’t ever participated in this kind of event, was also supposed to lead to the release of a highly anticipated report on the state of global biodiversity, and I had a relatively shallow knowledge, at this point, of the details of the institution’s machinery and of the organization of the discussions. Therefore, and since the IPBES plenary was to take place in Paris, where I had just returned from my PhD fieldwork in Colombia, I found it to be an opportunity not to be missed. This led me to take it as another institutional fieldwork, even if I mostly put it in line with the predefined spatiotemporal characteristics of the plenary (at least physically speaking and considered as the event during which the people effectively gather). While thinking at first to only include a brief description, the richness of the data recollected during this week induced

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

me in working much more on it than I had planned. This data thus constitutes the main basis on which much of this chapter is based.

I had tried to register in advance on the website to be able to attend but at the moment of registration I realized they were asking to be part of a partner organization. While none of my two main universities, the EHESS in Paris and the University of Milan, were registered, I found out that the University of Turin, which is part of the network of universities of my Italian PhD program, was registered. I haven't yet been able to know the origins of this difference between these institutions, but I imagine that it could be due to the fact that a member of the laboratories had previously requested the university to register to the IPBES. Later on, to finalize the registration the IPBES sent me a formal invitation letter which I should show my organization to have in exchange "an official nomination letter by your organization to nominate you as its representative", a nomination that I didn't really know what it implied and if I would actually "represent" the university, with what mandate, functions or obligations. When on the first day the people at the welcome desk finally gave me a pass which was saying "observer", it reassured me somehow. My university, on the other hand, while agreeing on providing me the letter, never gave me any specific advice on how to "represent" them.

The plenary session was planned to last from Monday to Saturday, with the previous Sunday dedicated to the information and consultation of the "stakeholders" and between each "region" of the world (see Figure 6). This session was particularly important because it would close the "first work programme" of the IPBES, as decided seven years earlier, culminating with the release of the most ambitious report they had produced. The discussion for the approval of the Summary for Policy Makers (SPM) of the assessment had to be done in the "Working group I", while another "Working group", chaired by the secretary of the IPBES, would work in parallel on the "review of the platform" (i.e. the IPBES) and the "Next work program", which aimed at deciding what the IPBES would do during the next seven years. On top of this some "contact groups" would either work on the budget, as the figure shows, or on other specific questions that had to be discussed at lengths in a smaller group before being brought to the working group, as it was the case for the discussion of the figures of the report.

Considering the length of the document that had to be approved and the number of comments, the sessions started to extend beyond their planned schedule almost from the beginning of the week, which caused some stress to the chair for managing the session's time (or at least he was acting like if it was the case so to lead everyone to the finish line on time). Some of the night sessions were also extended and an extra session was added on the Friday night. The few people working for the secretariat of the IPBES therefore ended up basically not being able to sleep off the whole week because at the end of the day they still had to review and compile all the changes that had been agreed on during the day, put the new version of the document online and prepare the work for the next day.

This organization, as well as the fact that I hadn't been prepared to come for a marathon session which meaning and importance for me in terms of research and fieldwork was still blurry (my attendance to the event being more opportunistic than thoroughly thought), lead me to be in the situation of often having to choose which moments and discussions to attend, and as I was mostly interested in the discussions of the main document, I missed a lot on the other themes, in particular the questions of budget and the upcoming work program. In terms of methodology, I tried to focus on and do an ethnography of the discussions, including by observing the setting and the tools that were used, taking as many notes as I could, taking as well photographs (something no one seemed to care about), mostly about the text shown on the big screen but also of the setting

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

and the premises, and occasionally recording audios of the discussions. On the other hand I barely paid attention to the more general organization of the session, the dynamics of the people inside and outside the room, the types of discussions and preoccupations that some groups might have expressed, the organization of the time of the delegates, the food, the sound and translations, and many other aspects of these types of conferences that are too often overlooked despite their crucial importance to understand what is exactly happening at those conferences, and that my contribution will unfortunately not help to visibilize. Beside the observation of the discussions that were taking place during the working group sessions, the “Friends of the Chair” sessions and the plenary sessions, I also had the opportunity to talk with a few delegates informally, as well as to observe other elements pertaining to the Plenary sessions decorum, like the presence of other observers from the UN or NGOs, of journalists and in particular the work of the Environmental News Bulletin (ENB), the exhibition of scientific posters, the presence of other “stakeholders”, etc.

Figure 6: Schedule of the week of the 7th Plenary of IPBES as proposed by the IPBES secretariat (source: document IPBES/7/1/Add.1, “Annotations to the provisional agenda”)

Proposed organization of work for the seventh session of the Plenary of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services

Time	Sunday, 28 April 2019	Monday, 29 April 2019	Tuesday, 30 April 2019	Wednesday, 1 May 2019	Thursday, 2 May 2019	Friday, 3 May 2019	Saturday, 4 May 2019		
8–10 a.m.	Regional consultations and stakeholder consultations	Regional consultations	Regional consultations	Regional consultations	Regional consultations	Regional consultations	Regional consultations		
10–10.30 a.m.		Plenary Items 1, 2, 3, 4, 5, 6, 8	Working group I Item 6 Global assessment	Plenary Item 8 and item 6	Working group I Item 6 Global assessment	Working group II Item 9 Next work programme	Contact group Item 7 Budget	Plenary Items 2 (c), 12	
10.30–11 a.m.									
11–11.30 a.m.									
11.30–noon									
Noon–12.30 p.m.									
12.30–1 p.m.									
1–1.30 p.m.			Contact group Item 7 Budget	Contact group Item 7 Budget	Contact group Item 7 Budget				
1.30–2 p.m.									
2–2.30 p.m.									
2.30–3 p.m.									
3–3.30 p.m.									
3.30–4 p.m.	Plenary Items 9, 7, 10, 11	Working group I Item 6 Global assessment	Working group II Item 8 Review of the Platform	Working group I Item 6 Global assessment	Working group II Item 9 Next work programme	Working group I Item 6 Global assessment	Working group II Item 9 Next work programme	Contact group Item 7 Budget	Plenary Items 12, 13
4–4.30 p.m.									
4.30–5 p.m.	Working group I Item 6 Global assessment								
5–5.30 p.m.									
5.30–6 p.m.									
6–6.30 p.m.									
6.30–7 p.m.									
7–7.30 p.m.	Opening ceremony								
7.30–8 p.m.									
8–8.30 p.m.			Working group I Item 6 Global assessment	Working group I Item 6 Global assessment	Working group I Item 6 Global assessment				
8.30–9 p.m.									
9–9.30 p.m.									
9.30–10 p.m.									
10–10.30 p.m.							(document preparation)		

Occasional tourists were also passing by the building, as groups are regularly visiting the building of UNESCO, which is already historical in its own way. At some point, a guide lead one group of mostly elderly people in the main room, where discussions on the SPM were taking place, a setting that was also for me quite impressive to see for the first time, especially with this immense screen showing a word document with pieces of phrases highlighted, and people seated with their headphones in front of desks above which were written the name of countries from all over the world (see Figure 7). Some of the visitors looked very curious, or maybe impressed, as seeing this in live is not that common. But after a few seconds a person, possibly from the IPBES, went to see them running and shouting: “what are you doing there, you can’t stay, leave now!!!”, to which the guide said: “they are just looking for a few seconds, then we go”, a response which was dismissed very loudly and almost hysterically by a “No!! The document is confidential, you can’t stay, you have to leave

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

right now!”. The document and the discussions were indeed stated as being confidential until the final release of the report the following week, and delegates and observers were asked “not to live-tweet about its content or the content of the discussions, and in particular about the specific positions of each country as we are discussing the document”. The tourists, considering their profile, probably wouldn’t have, but it was not the point. The journalists of the ENB, specialized on environmental negotiations, also refrain in their publications from saying which country expressed the positions they are referring to, but other observers that were not writing with the same temporality about IPBES meetings, like social scientists, might reveal some of the countries’ positions later on. This is the reason why I choose to say which country had which position, and also because knowing the country can help infer motivations behind the expressed position or statement, or at least draw some plausible hypothesis about them.



Figure 7: Main room of the UNESCO in Paris where the seventh Plenary of the IPBES and the discussion of the SPM took place. As the discussion takes place, the text actually discussed is shown on the big screen, behind the stage where are the chair, the secretaries of the IPBES and the scientific authors that worked on the part discussed (my picture, 30/04/2019)

I’ve observed most of the discussions of the GA working group but I’ve focused in my descriptions and analysis particularly on the two paragraphs and a figure that concerned indigenous peoples. This comes from a personal research interest, but is also due to the fact that the description and assessment of their role and approaches by the States representatives fits awkwardly in an intergovernmental body that tries so much to acknowledge them while limiting their actual presence and their capacity to express themselves on the paragraphs that concern them. The discussions of those paragraphs, with some parts being sensitive and

therefore difficult to negotiate between the representatives, also offered great examples of the nature of the discussions and the variety of the arguments used to propose transformations of the text, while also providing insights on the diversely problematic elements raised by the report with regard to indigenous peoples according to the states. The discussion of those paragraphs is even crucial to understand how is negotiated the representation of the distinct knowledge of the heterogenous group represented under the label Indigenous People and Local Communities – IPLCs and their relation to biodiversity. I've then included the discussion relative to two other paragraphs which are not directly concerning indigenous peoples but were extremely rich with regard to the nature of the debates at the IPBES plenary and in particular the different ways through which controversies emerge, are framed and then resolved.

The descriptions and comments are based on the observation I carried out during the Plenary, on transcriptions I made of the exchanges, on timestamped pictures that I took of the evolutive state of the text as shown on the screens as well as on the almost-daily updates of the “non-paper” published by the IPBES secretariat on the IPBES website and which were including the text in the version it had taken at the time of publication. The event was also followed by specialized journalists, and in particular those working for the ENB, which produces a daily briefing distributed on an A4 sheet at the entrance of the main room every morning and which recapitulates the main points of discussion of the previous day. I've therefore also tried here to put in perspective what I perceived, noted and gathered of the discussions with what their reporters shared they had seen. The descriptions are often extensive, so as to allow the most precise understanding of the successive modifications of the text, interventions of the actors, and stakes.

2.4 The institutional labour of delivering a scientific summary for policy-makers

The idea of creating an institution that would be inspired by the Intergovernmental Panel on Climate Change (IPCC) but focusing on biodiversity first emerged in 2005, and after lengthy debates on its design and focus that were described by Charvolin and Ollivier (2017), the IPBES was finally formally created in 2012. One of the main objectives of the IPBES is to produce reports on the state of biodiversity and related topics, in accordance to a work program that is agreed by the community of members, formed by over a hundred states. These reports are based on the existing literature of published peer-reviewed papers and the compilation of their findings, which are assessed by associating a confidence level (which is a mix between the limitations of the studies acknowledged in the papers, the ones perceived by the reviewers of the IPBES and the number of papers corroborating the findings), and some occasional in-house knowledge generation, in particular for allowing a larger participation of indigenous and local communities and for the recognition of the value of their specific knowledge by its inclusion in the reports. After the production of reports on various themes, including pollination, land degradation, and regional assessments, the IPBES had designated authors who would work on the most ambitious report that it would produce and that would conclude a first cycle of a seven years-long work program, that is the Global Assessment on Biodiversity and Ecosystem Services. Following the timeline that had been sketched in the rolling work program, this report was to be completed for the 7th session of the Plenary of the IPBES, that took place in May 2019, during which it would be approved and then released. The Plenary, with an uppercase “P”, is the annual meeting lasting a week during which all the

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

representatives of the member states as well as the scientists working on the assessments and the administrative team of the IPBES, gather in one place to review the work that has been done, validate the reports that have been produced and discuss future orientations as well as financial and organizational aspects. Since the IPBES, as its name indicates, is an “intergovernmental platform”, the approval of the reports requires that all countries approve it (without exceptions or, in practice, without oppositions).

The reports are coordinated by a few main authors (the Coordinating Lead Authors-CLAs), each chapter is written by designated Lead Authors and other scientists might be invited during the redaction of the report to give some feedback, as “contributing authors”. At a later stage, the representatives of the countries are also invited to submit their remarks, and the draft reports are opened to public reviews from anyone who may be interested in giving their opinion about them. But, as the report is the exclusive product of the authors, most of the attention of the countries goes toward the SPM. It is in this summary, which inclusion is quite common as well in the first pages of reports produced by many NGOs, Think-Tanks and many other organizations that wish to influence policy (a variant of the summaries for “decision makers”), that most of the “science-policy” aspects of the IPBES seem to crystallize.

The SPMs are not only a kind of end-of-the-chain product of all the work of the IPBES but also its most visible results for the general public, as they provide the basis of the subsequent press conferences and interviews of the authors, of the media articles that are released when the embargo on the report ends, and the discussions in social media. The few pages of SPM are not only what is going to get most of the media and public attention, but also what is designed and hoped to be the transmission chain to influence the “policy-makers”, generating an impact that is the highest aim and *raison d'être* of the IPBES. They're therefore the face and the most tangible part of the “science-policy interface” that defines the IPBES”, viewed by a number of actors as something that does, should or may work as a simple connective translation, as I will show below, with the aim of influencing the decisions and policies of the (real) outer world and ultimately positively impact the “state of biodiversity” or the “trends of nature”, depending on the version. This goal is clearly restated in the first paragraph of the foreword of the published SPM of the Global Assessment: “A key objective of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES) is to provide Governments, the private sector and civil society with scientifically credible and independent up-to-date assessments of available knowledge for better evidence-informed policy decisions and action at the local, national, regional and global levels”. While this role assumes a relation between knowledge credibility and availability with the improvement of the decisions and actions, we will see that it also impacts the type of work that is done by the IPBES and the framing and wording of the scientific documents.

For these reasons, and while the discussions between the states' representatives can also be quite heated on other subjects, such as the financing of the organization or the content of the work program, the SPMs are reviewed extremely carefully and debated fiercely by the representatives of the countries before and during the plenary. The discussion of the documents follows their order of importance and therefore starts with the SPM, which comprises Key Messages, then the Background Messages (which are a kind of extended version of the Key Messages, together with the assessment of the degree of confidence of the statements as well as references to the sections of the main report that it summarizes) then the figures and their captions (which are first reviewed in another room by a smaller group in parallel to the main text, before being discussed by the whole working group). An idea of the orders of magnitude of this difference, which could be a proxy of the

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

importance of the care given to the details, can be expressed by the differences of the time spent on reviewing and approving the different parts of the report: during the session the delegates spent 3 days and a couple of evenings reviewing and discussing the “key messages” of the SPM; they then spent about one day, evening included, reviewing the “background” part of the SPM, which is about twice as long as the key messages and therefore averages to about six times less time per word; finally the full report of hundreds of pages has been “accepted” as a whole in just one formal moment (as the procedure provides).

The procedure is summarized in the published version of the SPM of the Global Assessment, which indicates that the report “is composed of a summary for policy-makers, which was approved at IPBES 7, and six chapters, which were accepted at IPBES 7”. This step, consisting in the discussion of an assessment in plenary, is also briefly described in a figure illustrating the generic IPBES assessment process and reproduced in their *Guide on the production of assessments* (IPBES 2018) as the moment, part of the Stage 3 called “Approval/acceptance”, when the “plenary approves the SPM line by line”, a denomination that doesn’t express (but that do invisibilize) the discussions and modifications that the SPM will actually be subjected to. Later in the document, the subchapter titled “Approval of SPM by the Plenary” describes the process with a few more details as follows (my emphases): “The SPMs are normally discussed line by line in a contact group. It is then *presented* to the Plenary for *consideration and approval* in the presence of the co-chairs and some of the experts of the assessment, who will be able to address the *questions* of the Plenary and *discuss whether proposed changes are compatible with the science contained in the report.*” More specifically, the assessment’s co-chairs and the CLAs will be “present on the podium to explain and defend the scientific basis for the findings and provide scientific clarification and advice on any reformulation of the findings under *consideration*”. The description of the process therefore portrayed it in a somehow ambivalent way, the moment of “presentation” being for the “consideration” of the text by the Plenary (which means almost exclusively by the states’ representatives, although other “stakeholders” might be allowed to speak, and their proposition considered if supported by a state). We can also note some strange formulations implying first that the Plenary may not act in ways that modify the text, only “considering” or “addressing questions”, with only a half confession that the experts might discuss “proposed changes” that the Plenary isn’t really supposed to be in the situation to offer. But if they do, the changes will have to be checked against the “science contained in the report” to verify its “compatibility”, which seems to be a purely technical action executed by the experts, and that therefore do not take into consideration any political aspect. Despite that, it is also said elsewhere in the IPBES Guide on the production of assessments that one of the aims of the drafting the key messages of the SPM before the plenary is to “set the stage for the negotiation of the SPM at the IPBES Plenary”, which is the only place that I’ve seen where they refer to this moment as a negotiation and not a simple “discussion”, a difference which has potentially profound implication on the understanding and scope of the definition of the “science-policy interface” and what it means in practice.

As expressed before, the IPBES intention with the assessments is to assess “knowledge” in the form of reports that should be helpful for taking decisions (which applies as well to their scenarios and models that are also “for better policies and decisions”). Although the IPBES does not hide the fact that it is an intergovernmental panel, its results are presented as purely scientific³⁸ and as a vehicle for science to enter the

³⁸ In the press release that were released after the Plenary, the report is presented as a compilation done by scientists, and Anne Larigauderie, IPBES Executive Secretary, is quoted saying that “IPBES presents the authoritative science,

political arenas. The opposite is not that much discussed, and while the impact of the “political” on the choices made by the IPBES (through its plenary and therefore through the suggestions and approval of the member states representatives) in terms of research agenda is acknowledged, the impact that it has on the selection and presentation of the results, if not on the results themselves, is much less often mentioned. It is precisely because the data is aimed to be used in the realm of the political, and will gain political value, that the “politicians” (in this case nominated states’ representatives and therefore professionals of politics) will wish to influence them (in range that mix what is considered to be their national and international country’s interests with their political views), with some resistance from the “scientists” to only allow changes within the parameters of what their “data” shows. But, for example, although they would not allow something that is clearly not what they’ve found (or that is not part of what they found and therefore the status of the statement is unknown), they would not oppose the deletion of entire paragraphs if some countries wanted to (they could maybe argue against it but without an as-strong legitimacy). It seems to show the different status of the non-saying (or what could be considered as the known-unsaid, the produced ignorance by a process of invisibilization or at least minimization of existing knowledge, and which also relate to the notion of negative knowledge (Chateauraynaud and Debaz 2017)), in comparison with the wrong-saying, in the scientific ethics, and therefore the lower leverage that the authors-as-scientists have to oppose intents of not saying something without switching to a whistleblowing mode.

The SPM might therefore be considered to be a summary *by and for* policy-makers — policy-makers who are actually far more than just designing policy, but also making choices orienting the national research budgets, in accordance with the degree of “autonomy” that researchers have, want to have or is considered that they should have, and are therefore not simple “receivers of science”. Since, as it is admitted in the guide and as it will be shown here, the discussions go much beyond a simple approval of the SPM, even if it said to be done “line by line” (a scale that can actually go down to word by word, or go up to a paragraph when its deletion is considered, for example). The changes proposed are also not only simple grammatical corrections, and even when only the change of a word or a coma is requested, it can have dramatic consequences on the meaning of the sentence. It is not to say that its content is necessarily less “true” or “scientific” at the end of the process, but simply that, somehow, it is different. One can therefore wonder what is actually happening at this moment, during which the government representatives discuss and modify altogether the SPM, with the necessity for unanimous agreement? What does it mean for the status of this document, as well as for the “science” and the “facts” that it expresses? How does this inform the essence and ontological status of the said “science-policy interface”?

Regarding the full report, its “acceptance” does not mean that it is accepted “as is” but rather that it is accepted after the SPM has been approved and that, as a disclaimer present at the beginning of each of the draft chapters of the global assessment states³⁹: “Governments accepted the Chapters at IPBES-7 based on the understanding that revisions made to the SPM during the Plenary, as a result of the dialogue between

knowledge and the policy options to decision-makers for their consideration”. The introduction does mention on the other hand that its summary “was approved at the 7th session of the IPBES Plenary”, which means for the IPBES chair Bob Watson that “the member States of IPBES Plenary have now acknowledged” its conclusions. “Acknowledged” means in the Oxford dictionary that it is “accepted as valid or legitimate”, not that this acceptance was under the condition of some changes.

³⁹ As seen for example at the beginning of the “unedited” version of May 31th 2019 of the chapter 2.2.

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

Governments and scientists, would be reflected in the final Chapters”. It is not clear to which extent the changes in the report have to reflect those in the SPM, because as the report is much longer, everything that is stated isn’t fully represented in the SPM and couldn’t be subjected to approval. It is also not clear whether deletion of a paragraph of the SPM would imply the deletion of the corresponding part in the report, for example. These questions come up against a limitation of the analysis I’m presenting here and that is the absence of comparative analysis of the full report before and after the Plenary, that could have helped to understand the full extent of the changes made to the SPM over the full report.

In an email that the IPBES secretariat sent in May 2020 about the planification of an IPBES workshop on biodiversity and pandemics, they explain that “the workshop will comprise about 20 experts selected by the Multidisciplinary Expert Panel (...) as well as about 15 additional experts nominated by Governments and stakeholders. The outcome of the workshop will be a workshop report that will (...) be made available publicly in September 2020. It will include a prominent disclaimer that the report has not been reviewed, endorsed or approved by the Plenary”. It is interesting to note first that they considered that they had to state in the email planning the workshop that the report will say that it wasn’t approved by the plenary, as if to anticipate the possible concerns of its recipients, including representatives of the member states. Secondly, they considered useful to not only say that the report will contain a disclaimer, but also that it will be prominent, which means no reader should be confused about whether it was approved or not. But is it really that important for most of the people who will read it or is it only for the IPBES community, and in particular for the member states? What difference does it make to most readers whether the report was approved by the Plenary? Does it make it less trustworthy, or more, depending on how much it is considered that politicians tempered with it? Will it have less value for the “policy-makers”? These questions are beyond the scope of my analysis but this shows that the review, endorsement or approval of facts or reports by the Plenary, or their absence, does have a strong importance to some actors and is a politically sensitive matter. Nonetheless, the approval of the reports by countries doesn’t impede governments to challenge or dismiss particular findings, even if their position might itself be challenged by actors for which the reports may support the production of grasps for this contestation.

Likely not wanting the public to focus on the dissensus and the issues raised during the discussions, the guidelines indicate that “sessions of the Plenary where SPMs are being discussed are open to observers but are closed to the media, including social media”. It was also asked during the session that comments made on social media about the debate may not describe the particular positions by referring to the countries who expressed them. As the report itself isn’t discussed, it is considered that it remains the sole product of its authors, but since the SPM is discussed by the plenary, the IPBES Guide on the production of assessments indicates that “the SPM will then be formally and prominently described as a report of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services”. This statement aim at reinforcing the legitimacy, based on their consensuality, of the findings of the report.

The aim of the descriptions below is to show how evolves in its final stage a text that has been initially written by scientists as a scientific product, and that thus has to respect the most fundamental rules of argumentation and justification so to reach scientific validity, as it enters a political arena in the literal sense. But this arena is also where it originated, as the report and the SPM discussed during the Plenary are the result of a three-year process, which started with the states’ representatives debating the future orientations of the

platform, by considering the assessments of the scientific gaps on one hand, the societal and political needs on the other, and the “interface” role between the two that the IPBES ought to be.

Considering the temporal material manifestation of this arena and physical gathering of its members, I’ve decided to include a number of photos alongside the description of the debates, since it is essential to link the discussions with the context in which they take place as well as with the tools that support this discussion and that contribute to defining its qualities. This includes the way the stage is set-up, who is on it and who’s in front, the big screen in the back showing a word processor, the use of coded text attributes and a number of word-processing techniques and formatting (like the use of brackets or highlighting) that have already been well described in Charvolin & Ollivier (Charvolin and Ollivier 2017), who showed the importance of the relation between the form and the content to support the discussion on foundational texts of the IPBES.

It could also be noted, without getting into the analysis of the reasons behind this fact, that there was a large difference in the number of the states’ representatives present at the conference for each country (the USA and France seemingly had among the largest groups, while other countries left their chairs empty almost the whole week), their presence during the plenary (some countries had representatives that were often not here) and how much they were requesting the floor to speak. Some countries were definitely not seeming to feel the same urge to speak, and it could be presumed that it is a matter of capacity, legitimacy, knowledge, consideration of the consequences for their country of the debated document (and possibly the low capacity that it might be used for leverage by non-state actors, for example), or that it isn’t just about the interest for the discussions but maybe also about cost of having people dedicated to this task.

2.5 Description of discussions

2.5.1 Paragraph B6: indigenous lands between tradition, science, law and politics

Paragraph B6 focuses on the land that is managed by indigenous people and local communities, the main idea being that, although it is under high pressure, “nature” is declining less rapidly there than elsewhere. Since its review during the plenary immediately generated conflictual interventions from the states’ representatives, the chair invited those who felt concerned to discuss it during a “Friends of the Chair” session which would take place at the plenary dinner break. Those sessions allow the small group of the representatives who are the most concerned with the content of the text or committed to obtain some modifications or to maintain intact some of its key statements, expressions or denominations, to gather in a less formal way during a break of the Plenary to discuss at length the problems raised by the representatives in order to find a compromise or to agree on alternative acceptable formulations. This discussion is led by the Lead Author who is responsible for the part of the report which is summarized by the paragraph in question, assisted by relevant Authors, and, as the picture in Figure 8 shows, it is still done under the large screen displaying the document that is edited in live by the secretary according to the requested changes by the representatives or the propositions made by the Authors in order to find consensual formulations.

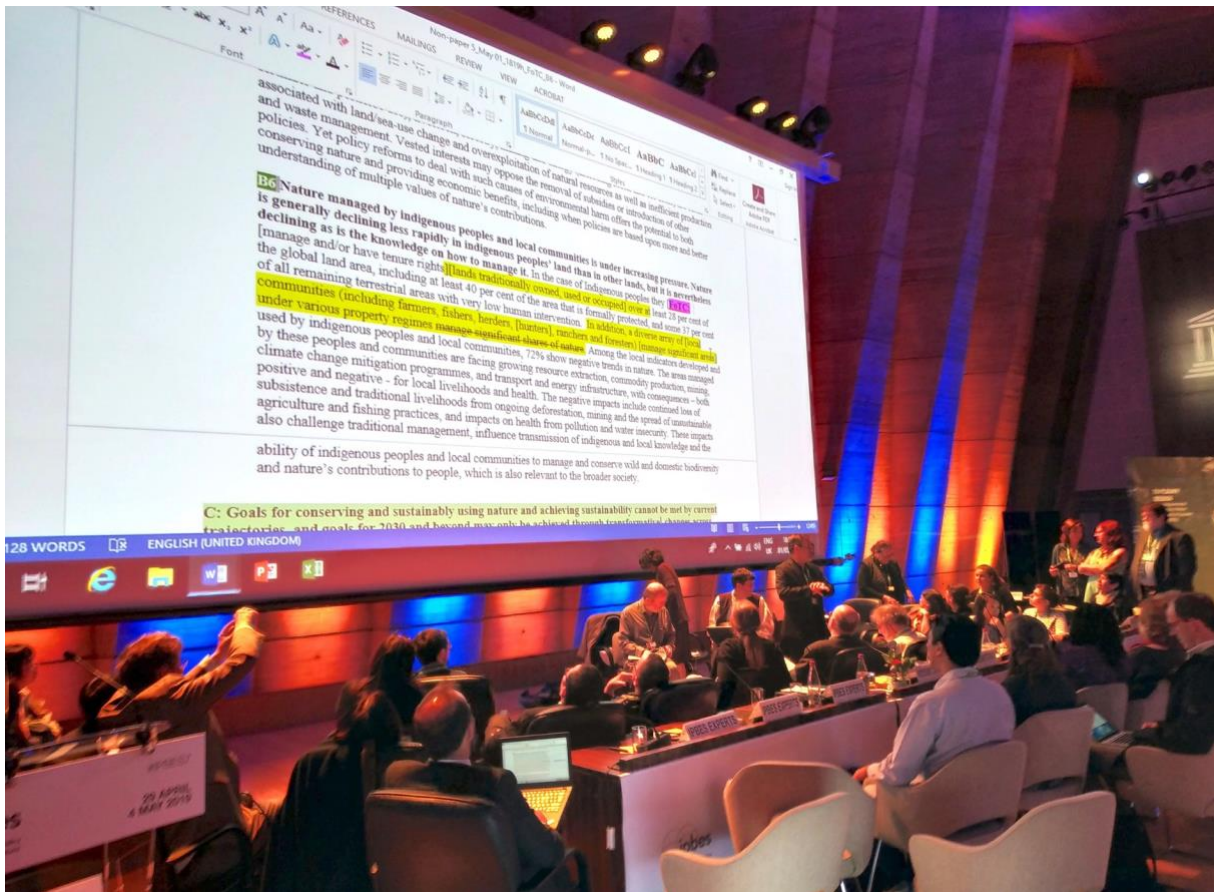


Figure 8: the “Friends of the Chair” gathering on the main stage to discuss the paragraph B6 of the SPM.

One lengthy debate focused on how to qualify the territories, areas or lands on which indigenous are living, considering on one hand the variety of levels of recognition of the existence and presence of the indigenous themselves as well as the variety of legal status and other types of relations that the indigenous have with these “lands”. The debate over these terms actually wasn’t at the centre of what the text wanted to say, but because it was necessary to characterize these lands to say it, it led to an interesting little exercise of clarification (and in particular of clarification that it wasn’t that easy to clarify it, and even more so when having to find an agreement). The journalists of the Environmental News Bulletin considered that the disagreement emerged from “different opinions on the relevant categorization and available data”. The expression used to describe those “lands” was initially those that indigenous people “manage and/or have tenure rights over”, but various other propositions were made by the participants, including “the lands that they traditionally occupy”, the “lands traditionally owned, used or occupied” or the “land over which indigenous have kept an influence” (see Figure 9). Finally, it was agreed that, since the sentence was only meant to describe a specific proportion of “the global land area”, the lands that are described would be those that are “traditionally owned, managed, used or occupied by indigenous peoples”, with a footnote explicating what “managed”, a word that usually relates to ways of thinking quite different from the ways indigenous see their relations to their territory, means in this context and according to how the “data sources define land management⁴⁰”.

⁴⁰ The IPBES authors wrote at some point in the text that saying that they manage it signifies that they “retain a substantial de facto influence on land management” and finally put in the footnote that “These data sources define land management here as the process of determining the use, development and care of land resources in a manner that fulfils material and

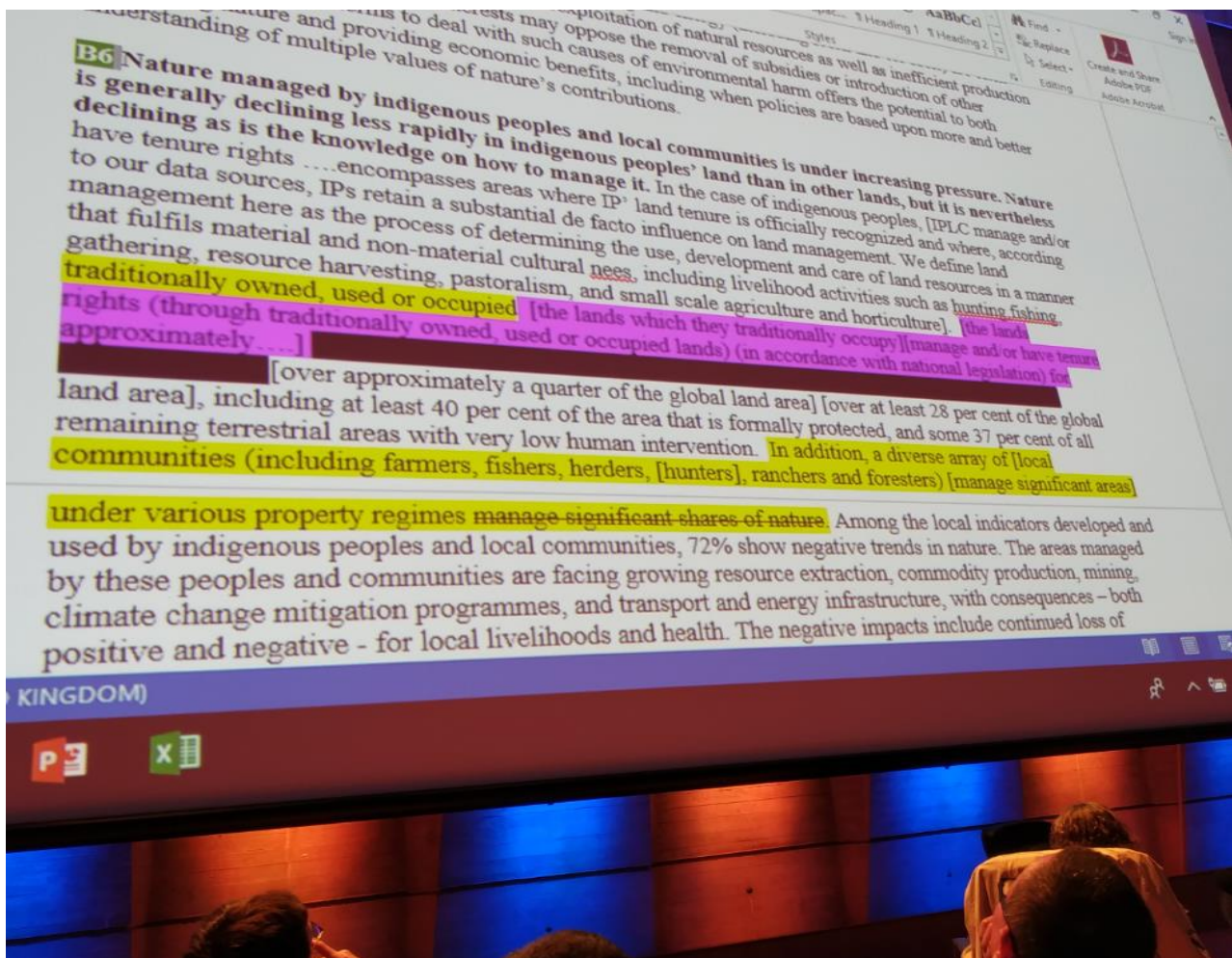


Figure 9: Text of the paragraph B6 as shown on the large screen during the “Friends of the Chair” session and that shows in brackets a number of requested changes made by the country representatives.

As the journalists explained, the issue might have partly originated in the report’s aim of bringing together and analysing a large number of scientific studies on the state of biodiversity in places or lands with which indigenous have a relation. Indeed, this relation can be seen (or negated) through a number of lenses and perspectives and therefore characterized in many different ways in the papers analysed to produce the GA. The choice made by the authors of these papers likely depended on a number of factors, but may have often relied on existing status and categories. This could have been for example the existence of formal recognition of indigenous land in the form of reserves, or the affirmation of ethical, political or ontological positions, like the acceptance (or not) of the formal characterization of these areas by the State within which the studied indigenous live, in relation to the fact that these denominations have profound historical, legal and political ramifications and consequences. This would therefore limit the issue, at least on the surface, to an epistemological problem of regrouping the terms that are from a variety of universes and which all seem like defining very imperfectly the type of relation that indigenous peoples might have with a territory so that the biodiversity is better preserved. This relation, to be comparable and significant, has to be limited in space and time as well as consider other constraints, so to exclude lands that would include cities, among other difficulties. For example, it isn’t clear how they dealt with the land of Bolivia, a country where the majority of

non-material cultural needs, including livelihood activities such as hunting, fishing, gathering, resource harvesting, pastoralism and small-scale agriculture and horticulture.”

its population is “indigenous”. But another problem can also be considered to be one of defining a relation between a group and a geographical area, in general and in an even more acute way for societies that unsubtly base this relation mostly on legal status, frontiers and private property. A linked issue is reflected by contrast in the ongoing struggles to stabilize and give depth to the category “indigenous”, which is understood as implying often a specific relation with the “earth”, “land” or “territory” (and a different one from the one non-indigenous have, so to be able to create a sound distinction), but without being able to say exactly what in a concise way, and even less in a way that would be valid for all those that recognize themselves as indigenous in the world⁴¹.

The result is a kind of mix and match set of terms that seem to cover a wide range of situations and relation types, including legal, acting on or being on a land, possibly defensively, while not saying what unifies them, or what truly matters. The only shared feature is the “traditional” one, which seemingly aims to give a tint of vaguely defined (and double-edged) temporally and qualitatively restrictive aspects to them, even though the adjective “traditional” is both claimed and rejected (or refused to be an injunction) by many indigenous individuals and groups. The term wasn’t present in the original text, probably because it hadn’t been found in the “data sources”, where its use hadn’t been considered necessary. In another attempt to conciliate two different universes together, at the price of sometimes awkward juxtapositions characteristic of the IPBES approach, those lands that bear or support a given relation qualified as “traditional” are then said to be a share of a “global land”.

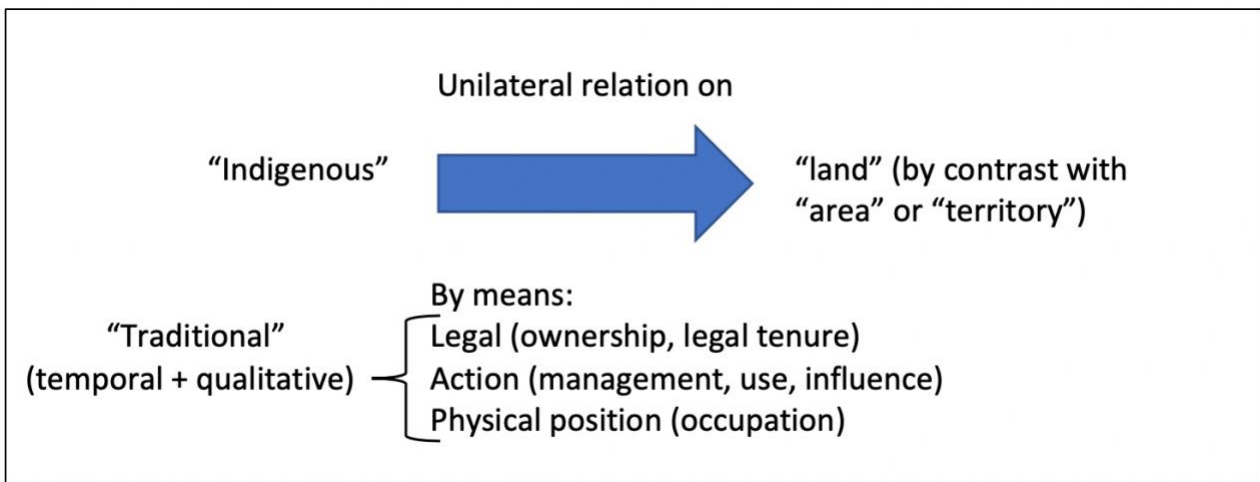


Figure 10: relation types between Indigenous People and some land, as debated for the paragraph B6.

While it is repeated many times in the GA report that the humans are not outside of nature and of the biodiversity, but part of it, the relation between the indigenous and the land is described here as unilateral (see Figure 10). The human actors “own”, “act on” or “occupy” a “land”, a relation not quite as simple when taking about the “territory” in the sense used by many indigenous groups, and which embed a much more complex web of multidirectional relations. Then, by contrast and because the IPBES aim at being more inclusive of other visions and not be hegemonically western-bound we can also speculatively note that the phrase considers

⁴¹ This is why a number of definitions, and in particular the one provided in the ILO Convention No. 169 rely on an historical continuity from before “conquest or colonisation or the establishment of present state boundaries”.

the land owned, not the territory to which they belong, that is owning them and to which they owe, which is where they share their lives with, or that is the extension of their bodies, formulations that are sometimes used to reflect the reciprocal relations of belonging, care and nourishing, that are woven in those other “universes”. This allows in return to note the continuous tensions and great difficulties that the scientists of the IPBES as well as the most committed country representative encounter to find pathways to overcome the intrinsic contradictions of wanting to accommodate together different ontologies within the strict paradigm of scientific language.

Regarding the possibility of the use of the expression “lands traditionally owned, used or occupied”, the representative of France insisted that they were not in favour of it and that, if it were to be used nonetheless, they would require to add “immediately after it” the expression “in accordance with national legislation” (see Figure 9). It is somewhat puzzling to consider what would be a “land traditionally occupied in accordance with national legislation” versus a “land traditionally occupied *not* in accordance with national legislation”, but this intervention followed the French tradition regarding the international texts on indigenous peoples which follows a longstanding position of the successive French governments regarding the interpretation of the French constitution. This position was summarized later to me by the representative of France present during the discussion on the text, that they were following very attentively, as: “the French people are one and indivisible, so we cannot leave sentences that would suggest that there are differences, and that would contradict previous texts” (i.e. the French Constitution). The question of recognition is therefore here replaced by a purely formal problem of adequacy. This is about the same argument that has repeatedly been put forward by France not to join the group of countries which signed the legally binding Indigenous and Tribal Peoples Convention of 1989 (ILO convention 169)⁴², an absence which causes indigenous living in the French territories to claim they lack adequate recognition, autonomy and protection⁴³. While the same logic guides the intervention of the France representatives in both cases, the status of the two texts are completely different, and in the case of the SPM of the IPBES GA, one could really wonder how the interpretation of a national constitution may guide the phrasing of what are considered scientific facts which are not country-specific and do not even have a pretension of being prescriptive.

But, as I will show now, France⁴⁴ is not the only country which sees, evaluates, bends or reshape “facts” about indigenous through its constitutional lens. During the discussion of the same paragraph if the SPM, the

⁴² This position was recalled by the ministry of Foreign Affairs in 2013 (the same words were again used in 2019) stating that “ILO Convention 169 reflects in part the values to which France is committed. Nevertheless, this international instrument attributes collective rights to indigenous peoples that are contrary to our constitutional principles of equality and indivisibility of the Republic. However, this incompatibility has never been an obstacle to the adoption of ambitious policies in favour of indigenous peoples.”* (Response to the written question n°09601 by M. Jean-Étienne Antoinette, Guyane - SOC, published in the official Journal of the French Senate on 05/12/2013 - page 3459.)

<https://www.senat.fr/questions/base/2013/qSEQ131209601.html>

⁴³ The demand that France sign the ILO-convention 169 was reiterated in August 2019 by the Grand Conseil coutumier des peuples amérindien et bushinengé in a tribune on the website franceinfo: “We note the commitments made by the President of the Republic, Emmanuel Macron, ‘to involve the indigenous peoples’, but this must be translated into the full participation of the indigenous peoples in all decisions concerning French Guyana and the Amazon, and therefore the strengthening of the Grand Customary Council as a decision-making body with real operating resources. We once again call on the French government to ratify ILO Convention 169 in order to truly recognise the rights of indigenous peoples.”*

https://www.francetvinfo.fr/monde/ameriques/amazonie/incendies-en-amazonie-ce-ne-sont-pas-de-simples-feux-cest-loeuvre-du-capitalisme-denonce-le-grand-conseil-coutumier-des-peuples-amerindiens_3590305.html

⁴⁴ At the IPBES, like in other intergovernmental arenas, representatives of countries are often simply called by the name of their country, like if they were actually blend with their country, or invisibilize themselves, as their role suppose they do, so I’ve decided to use it as well occasionally in this part so to make feel the diplomatic aspect of the discussions.

representatives of China also expressed their concern over the stated proportion of the global land area that was falling under the definition previously debated. The statement initially read: “Indigenous peoples manage and/or have tenure rights over at least 28 per cent of global land area” but, because they do not recognize the presence of any indigenous groups within their borders⁴⁵, China asked the Lead Authors to make sure that the calculation took into account a percentage amounting to zero for the territory of China⁴⁶. My field notes allow understanding the debates that took place at this moment, and the different interpretations that can be expressed over the meaning and importance of a seemingly simple qualifier:

The [scientific] Author agrees to make the changes that China requires (they probably don’t have much of a choice). He says that he took the data that they used, recalculated the proportion without including the land of China, and that the figure is now accurate when using the adjective “approximately” or “at least” before “a quarter”, because it would be 25,5% (against 28% before), so it could be described as “at least a quarter”. But China say they would like then to remove the “at least” or otherwise keep it in bracket [see Figure 9] until they “consult with capital”. The authors say that the debate on the adjective is not relevant because the “at least” refers to countries for which there’s no data and that could potentially add to the number, but Chinese representative does not seem to hear the argument. (...) After the resumption of the plenary, the chair, who would like to have the paragraph approved, asks China if they have resolved the question of “at least”, but they respond that it is the night in China and that they will therefore not have an immediate response from their capital.

The modified percentage has also been reflected in the Background Paragraph 20 of the SPM (which corresponds to and expands the content of the paragraph B6 discussed here), under the phrasing “At least one quarter of the global land area is traditionally managed, owned, used or occupied by indigenous peoples”, and the modifications should also be reflected later in the full report.

The area that is “traditionally owned, managed, used or occupied by indigenous peoples” should logically be larger than the area that “indigenous peoples manage and/or have tenure rights over”, since it includes a wider set of “property and access regimes” (a phrase used later in the paragraph and that includes “traditional ownership” — itself a bizarre expression which meaning and appropriateness have been contested). But this issue hasn’t been debated, as it was probably considered to be part of what the journalist had called “an issue of categorization” which had to be resolved by showing some conceptual flexibility (or blurriness). The percentage even actually ended up being smaller because of the agreed dismissal of the existence of indigenous people living *in* China. It is also interesting to note the sensitivity of China about how a number was calculated and, it could be presumed, about the fact that an adjective in front of it could possibly let people think that it is agreed that all indigenous were not included, including those living in China for those considering that there are indigenous in China. They might want to avoid this threat or discomfort, or simply to help the Authors be “factually correct” (regardless, as it should be, of the paths that lead “China” to consider this to be correct). In any case, they’ve succeeded in having the numbers changed in the summary, without any objection from any country or NGO, in a way that is still “factually” or mathematically correct even for those who would argue

⁴⁵ The situation in China is actually quite peculiar in relation to the place of the “indigenous peoples” and the acknowledgement of some cultural diversity. Indeed, according to the NGO IWGIA (International Work Group for Indigenous Affairs), “in addition to the Han majority, the Chinese government recognizes 55 peoples of ethnic minorities. Although the Government of China adopted the United Nations Declaration on the Rights of Indigenous Peoples, it does not recognize the term indigenous peoples, so the Declaration is not implemented in China”. Source: www.iwgia.org/en/china

⁴⁶ The same view that also led them to require a modification of the Figure 6 of the SPM, as described later on.

that there are indigenous peoples in China (since “over at least x” was transformed in an “at least y” with $y < x$). But as it remains “correct” for all, it loses precision and some political weight (or at least some potential political grasps it could have given to Chinese indigenous activists), at least on this particular point. While the SPM authors, as well as the IPBES representatives are saying to be wanting to maximize its political weight so to help reach “the future we want⁴⁷”, its features and frame are nonetheless closely monitored and refined by the States. This example shows that the statistics presented in the reports of the IPBES are not exempt from political influence but that they might be a composite or a compromise (or like in this case a levelling down) of the visions through which states see, create and control their territories and human and non-human populations. As much as the IPBES can put forward the “local knowledge” and aim to include it in its assessments and well as consider more generally the specific roles of the Indigenous Peoples and Local Communities, as an intergovernmental platform it can do so inasmuch as this “knowledge” does not challenge a legal or institutional position of the state within which they live and who will have the ultimate say on certain definitions, classifications and relations. Chinese representatives didn’t ask nor didn’t seem preoccupied for example for any other changes in this paragraph nor the others that concerned Indigenous Peoples: once it has been agreed to consider that there aren’t indigenous peoples in China, then whatever is said about indigenous peoples in general doesn’t concern them anymore.

2.5.2 Figure 6: a map with uncomfortable details

I will now present briefly the debates around the Figure 6 of the SPM, which aims at presenting the “contributions of indigenous peoples and local communities to the enhancement and maintenance of wild and domesticated biodiversity and landscapes”. This was originally going to be through a series of pictures of indigenous peoples and their lands, classified under five topics, which “aim to illustrate, not represent, the types and diversity” of their contributions, as well as a figure in the middle that aimed to put in perspective the areas where the indigenous are living with the rest of the world. The first choice of the authors has been to put a map that would “represent recognized indigenous territories and other areas owned and/or managed by indigenous peoples (see disclaimer⁴⁸)”. These areas were at some point going to be simply called “Indigenous lands” with an explanatory footnote for which France, supported by other countries, again required to add “in accordance with relevant national legislations⁴⁹”.

As a footnote of the legend of the first version of the Figure 6 of the SPM indicates, this map is a modified version of the one presented in an article by Stephen Garnett et al., named “A spatial overview of the global importance of Indigenous lands for conservation”, and published in *Nature Sustainability* in 2018 (see Figure 11). The legend of the figure in the article states that the map represents the “lands managed and/or controlled by Indigenous Peoples”, without disclaimer. While keeping the same map with the same data, as a comparison

⁴⁷ Name of the text adopted by the UN assembly at the RIO+20 summit in 2012 expressing the Vision 2050.

⁴⁸ The disclaimer of the map in the first version was the following : "The designations employed and the presentation of material on the maps used in the present report do not imply the expression of any opinion whatsoever on the part of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. These maps have been prepared for the sole purpose of facilitating the assessment of the broad biogeographical areas represented therein."

⁴⁹ The footnote was at this point going to be: “Indigenous lands are the recognized indigenous territories and other areas owned and /or managed by indigenous peoples, in accordance with relevant national legislations.”

between the two seem to show, the authors of the IPBES GA replaced the notion of “land controlled” with the one of “land owned”. Those notions might overlap but it could be asked whether it is actually correct to consider them in this case as synonyms to the point that changing a word for another wouldn’t have any implications in the representation of the areas on the map. A second remark is that considering and using the term “control” instead of “ownership” has very different political implications on who decides and on the consideration of legal versus de facto status, something that states usually reject (although it always depends on what land, from whose point of view, etc.). Both the legend of the original map in the article and the one of the figures of the SPM with the map indicates as well that the areas shown are only those where the presence of indigenous is certain, but that the areas where they are or with which they have a “cultural connection” (and other descriptions of a number of types of relations that always seem to miss some or other particularities) can be larger in reality. While this threshold can make sense logically, it also worried some states since it didn’t rule out the fact that indigenous might even be where it is not explicitly said that they are.

A second measure of precaution on top of the disclaimer, as it is possible to see in the map present in the Figure 12, the GA’s authors removed all the countries’ boundaries, something that is not relevant if they want to limit themselves to the “broad biogeographical areas” (as claimed in the disclaimer) and that can be the source of many troubles if discussed with states that do not agree between them. Despite that, and following the same logic as for the calculation of the percentages of the global land area occupied by indigenous in the paragraph B6 of the SPM, China refused very vigorously (as I have been able to observe, and as if discovering this map in the draft version had been such real shock for them that it had to disappear as soon as possible) to have a map showing that they were lands related in some ways with the presence of indigenous in their national territory. The map was finally replaced by a figure showing in a more abstract way the proportions of global overlap between three types of areas (see Figure 13).

Although the map originally in the Figure 6 of the SPM has been removed and its disclaimer with it, the final published SPM have finally preserved the disclaimer (see footnote above), putting it at the very beginning of the document, so to apply to all the statements it contains. This strategy allows the IPBES to elude the political aspects of the definition of the type of protection that areas can have and their inclusion into the territory of specific countries, which is an issue for all the producers of maps on which are drawn the borders between states, but also the status of the areas where indigenous people live. The aim is the neutralization by depoliticization of the choices leading to the maps produced, that are only “illustrative”, and even though indigenous on the contrary have sometimes expressed the intrinsically political dimension of the representation of the territory. The disclaimer is another example of the contortions that the IPBES, as an intergovernmental panel, have to make to articulate simultaneously different desired assemblages of knowledge and politics, and the circulations of ethical implications between the two.

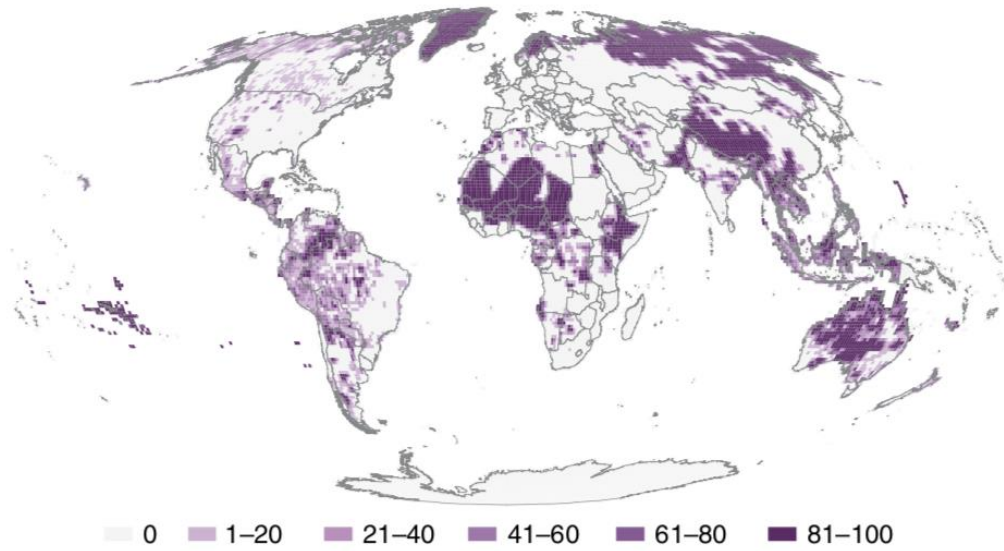


Figure 11: Map from an article by Stephen Garnett et al. that has been used to produce the map originally present in the first version of the Figure 6 of the SPM.



Figure 12: First version of the Figure 6 of the SPM (F6V1).

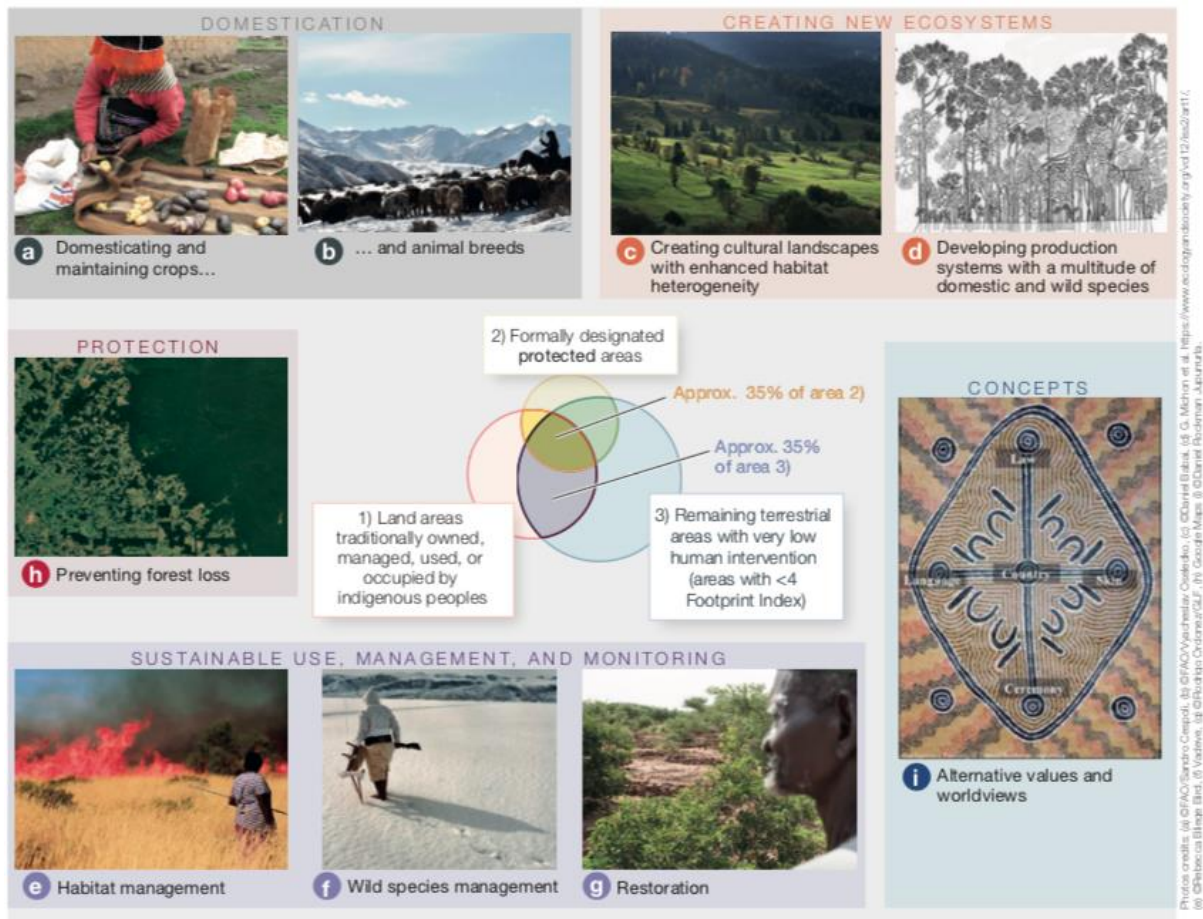


Figure 13: Final version of the Figure 6 of the SPM (F6V4).

2.5.3 Paragraph D5: rights of Indigenous Peoples between conservation benefits and subjection to national interests and legislations

The paragraph D5 of the SPM is probably the most important in regard to the statements about Indigenous Peoples in the SPM, because it links on one hand the recognition of rights and of crucial core aspects of indigenous cultures, as well as their participation in the decisions that concern their territories, with, on the other hand, benefits for “nature conservation and restoration”. It is therefore suggested that extending recognition and participation would be positive for “nature” and should be considered. The paragraph also puts forward the benefits that can result from including the “Indigenous Peoples and Local Communities” (“IPLCs”, as defined by the IPBES) in the decision-making processes, and then describes the means through which this inclusion can be fostered. This description is voluntarily vague because, as I will show, although there was some agreement on this argumentative movement there wasn’t on the specifics, including particular stiffness around any reference to “rights”.

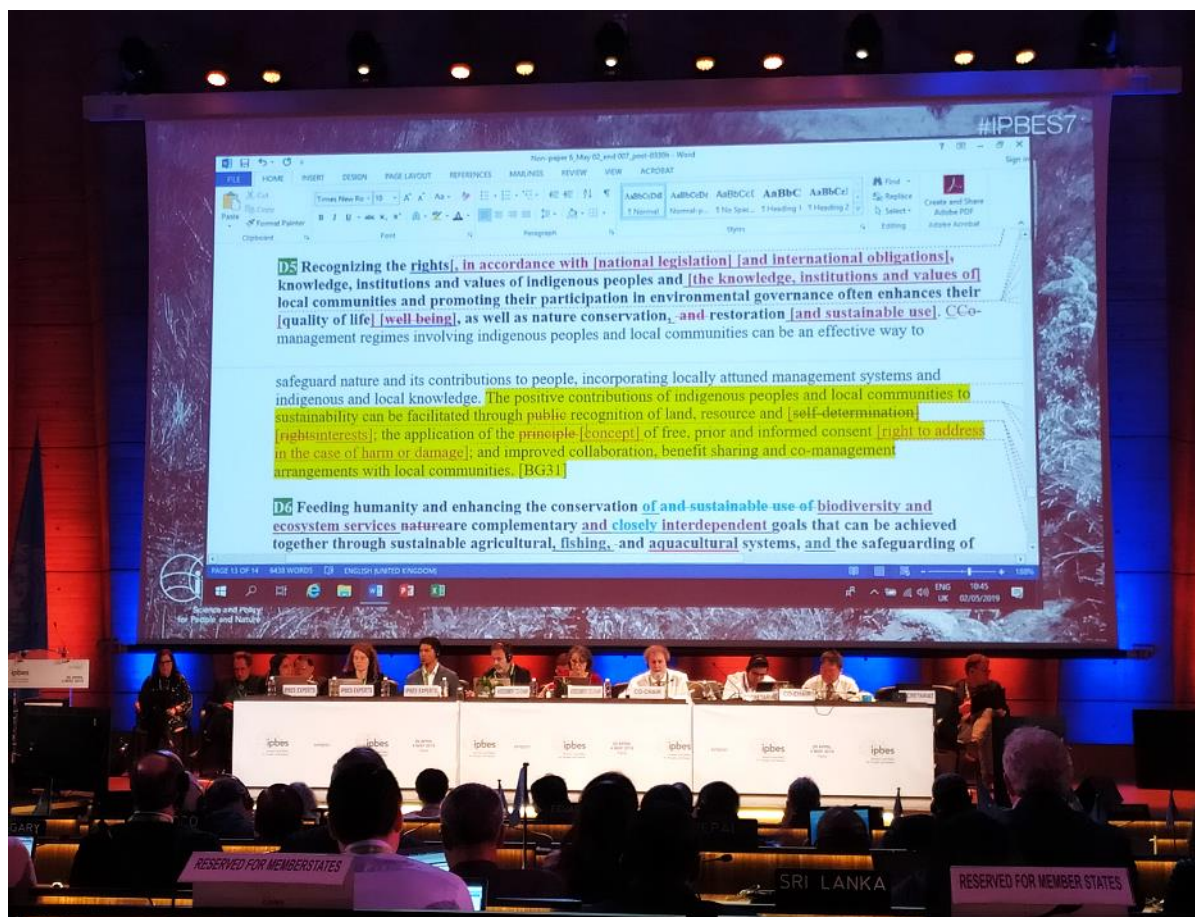


Figure 6: Discussion of the paragraph D5 during the morning working group session of May 2, 2019.

At the beginning of each IPBES conference, various groups are protocolary invited to make a statement to the assembly. This time, the International Indigenous Forum on Biodiversity and Ecosystem Services (IIFBES) — the body representing the interests of the indigenous people at the IPBES, but that doesn't have a blocking capacity — wished to make clear, in reference to the paragraph D5, that would be discussed during the coming days, that they “consider very important the SPM message that securing land tenure and the rights of indigenous peoples and local communities is a proven solution that should be supported and upscaled⁵⁰”. Unfortunately for them, their message didn't prevent the undermining of the initial meaning of the text by the revisions made during the conference. Indeed, at the moment of their statement the first sentence of the paragraph they were referring to was reading as follows (See Table 2, version D5V1): “Recognizing the rights, knowledge, institutions and values of indigenous peoples and local communities and promoting their participation in environmental governance often enhances their quality of life, as well as nature conservation and restoration.” But after hours of discussion between the delegates, including two Friends of the chair's demining sessions, the phrase was finally adopted as (version D5V3): “Recognizing the knowledge, innovations, practices, institutions and values of indigenous peoples and local communities, and ensuring their inclusion and participation in environmental governance, often enhances their quality of life and the conservation, restoration and sustainable use of nature, which is relevant to broader society.” The most

⁵⁰ International Indigenous Forum on Biodiversity and Ecosystem Services (IIFBES), Opening Statement to the 7th Plenary of the IPBES, 29 April 2019, Paris, France. https://ipbes.net/sites/default/files/downloads/ipbes_7_opening_statement_from_iifbes_0.pdf

important difference between the two versions is the deletion of any reference to the recognition of rights, a reference that a number of countries were rejecting.

Table 2: Successive versions of the paragraph D5 of the GA SPM.

Version	Description	Text
D5V1	Non-paper 1 (pre-conference)	Recognizing the rights, knowledge, institutions and values of indigenous peoples and local communities and promoting their participation in environmental governance often enhances their quality of life, as well as nature conservation and restoration. Co-management regimes involving indigenous peoples and local communities can be an effective way to safeguard nature and its contributions to people, incorporating locally attuned management systems and indigenous and local knowledge. The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through public recognition of land, resource and self-determination rights; the application of the principle of free, prior and informed consent; and improved collaboration, benefit sharing and co-management arrangements with local communities. [BG31]
D5V2	Non-paper 6 (post-Friends of The Chair)	[FoTC: Recognizing the knowledge, innovations and practices, institutions and values of indigenous peoples and local communities and their inclusion and participation in environmental governance, often enhances their quality of life as well as nature conservation, restoration and sustainable use which is relevant to the broader society. Governance, including customary institutions and management systems, and co-management regimes involving indigenous peoples and local communities can be an effective way to safeguard nature and its contributions to people, incorporating locally attuned management systems and indigenous and local knowledge. The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through national recognition of land tenure, access and resource rights in accordance with national legislation [and international obligations as applicable.] [self-determination] [interests], The application of the [concept] of free, prior and informed consent, [right to redress in the case of harm or damage], and improved collaboration, fair and equitable sharing of benefits arising from the use, and co-management arrangements with local communities. {BG31}]
D5V3	FINAL	Recognizing the knowledge, innovations, practices, institutions and values of indigenous peoples and local communities, and ensuring their inclusion and participation in environmental governance, often enhances their quality of life and the conservation, restoration and sustainable use of nature, which is relevant to broader society. Governance, including customary institutions and management systems and co-management regimes that involve indigenous peoples and local communities, can be an effective way to safeguard nature and its contributions to people by incorporating locally attuned management systems and indigenous and local knowledge. The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through national recognition of land tenure, access and resource rights in accordance with national legislation, the application of free, prior and informed consent, and improved collaboration, fair and equitable sharing of benefits arising from the use, and co-management arrangements with local communities.

The issue of “rights” is particularly sensitive for the governments but also crucial for indigenous peoples, and many countries made various remarks that aimed at reconfiguring the text while expressing their views on the issue, making the discussion extremely rich. I therefore wished to render in detail the step-by-step transformation of the first and of the third sentence of the paragraph D5 of the SPM, focusing on the parts of the sentences that talk about “rights”. This will allow showing how their meaning, scope and reach are transformed by additions or deletions of other words or expressions around it, and what are the preoccupation

and the arguments that are put forward by the different countries as well as the other actors, in particular the authors and the chair.

When the paragraph began to be discussed during the session that took place on Thursday 2 May 2019, France, following the same logic as for the paragraph B6, immediately asked for the floor to request that the beginning of the first sentence, that talk about the positive impact that can have the recognition of the rights of the indigenous people, be completed with the expression “in accordance with national legislation”. This obsession seemed to me quite troubling in this context, and made me write in my field notes the following: “France really seems to want to bend the science in this case, as if the science was subordinated to national legislations, or had a relation with national legislations... The most striking is that the sentence is not even a recommendation but a generic factual statement!” Indeed, when looking closely at the sentence it reads: “Recognizing the rights (...) of indigenous peoples (...) often enhances (...)”. Like everything included in the report and the SPM, what is written supposed to reflect the results of a consensual meta-analysis, coordinated by scientists mandated by the IPBES, of existing peer-reviewed articles. In their basic acceptance, these “scientific articles” contains statements, including causal relations, that are considered “true”, even if the degree of confidence may vary. Therefore, this sentence, deploying a commonly agreed logic, describes an “observable”, and observed, set of facts that are “often” causally linked to a desirable outcome. Since there have been observations, and that their analysis is the only base that have allowed this sentence to be written as it is, adding “in accordance with national legislation” does not make any logical sense: not only it does not seem to bear any relation with the statement but it is also likely to be wrong from the point of view of the authors, because it is not a parameter that was taken into account in the studies that have been reviewed and are supporting this statement. While the authors expressed on various occasions this argument when countries were trying to make additions out of nowhere, they didn’t say anything in this case, seemingly not considering that it was (it may in fact be possible to consider that it’s neither true nor false, since it actually belongs to a totally different registry of reasoning).

Following the intervention of France, Bolivia tried to counterbalance the expression “in accordance with national legislation” by adding “and international obligations⁵¹” (see Table 3, version D5S1V2). Argentina on the contrary went in the direction of France by requiring in the third sentence “the elimination of the question of the self-determination because it is a very sensitive question and it is not the place to treat it”. France wasn’t opposed to the mention of rights, as long as were somehow subtly opting out for their consideration within their national territory, something that Bolivia didn’t oppose as long as it can’t become an excuse for some countries not to respect their international obligations (treaties, conventions, etc.); but these precautions weren’t sufficient for Argentina, who prefers to delete any reference to it “because it is not the place to treat it”, and that they won’t discuss it here. The argument therefore refers to the adequacy of the arena with the object of the discussion, which they do not consider to be a matter of fact (that may generate a controversy) but a matter of politics (because of the concern it causes), and which should thus be treated in an openly

⁵¹ The same expression has been inserted with success in the Aichi target 18, possibly by the same countries, and even though those targets were prescriptive. The big difference is that it only refers in this case to “traditional knowledge, innovations and practice” and not to “rights”. Aichi target 18: “By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.”

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

political arena and not disguised as a factual issue. While arguments of depoliticization are often used against states or economic actors, in this case it is a state which doesn't want to be dispossessed of the negotiation through the use of scientific or factual arguments. More than a science-policy interface, the IPBES can here be seen as an arena which has to resolve problems due to the intrinsic mix of the scientific and political spheres, and within which the negotiations have to lead toward the classification, separation or exchange of the matters of fact and the matters of concern. The facts expelled of the institution as matters of (too much) concern are sent "elsewhere", where they may be dealt with, or not.

Following the intervention of Argentina, the USA then asked "to replace the word 'rights' by 'interests'", in order to transform the expression "self-determination rights" into "self-determination interests" (D5S3V2). After attempts of limiting the scope of validity of the argument of the phrase, of reintegrating it inside a wider framework (the international obligations), or simply deleting it, the USA seemed to aim at changing the main concept in discussion. Without pointing out directly the issue as Argentina did, their proposition went in the same direction, as the concept of "interests" is much vaguer and has a much lower weight than the concept of "rights". It is difficult to interpret the motivations behind their intervention but the style of their request seemingly aimed more at reframing the problem so to render it harmless than frontally fighting it like Argentina did.

As noted before, it could be considered surprising at first that, considering the nature of the text discussed, countries can and do ask for modifications, additions and replacements of words without basing their requests on the scientific literature that has been analysed by the authors. To the contrary, their interventions show how deeply the "scientific findings" are linked and crossed right through by political considerations and forces. In this example, the articles on which those statements were initially based looked at the impact of the recognition of rights, not of "interests", which meanings may or may not overlap and that have very distinct political ramifications. Foreseeing the complexity of the upcoming dispute on the paragraph due to the "very sensitive wording", the chair says that it will have to be discussed during a Friends of the Chair session.

Table 3: Successive versions of the first sentence (S1) of the paragraph D5 of the GA SPM.

Version	Date / Picture	Place	Phrase
D5S1V1		Non-paper 1 (pre-conference)	Recognizing the rights, knowledge, institutions and values of indigenous peoples and local communities and promoting their participation in environmental governance often enhances their quality of life, as well as nature conservation and restoration.
D5S1V2	20190502_104445	Plenary	Recognizing the rights [<u>in accordance with [national legislation] [and international obligations]</u>] knowledge, institutions and values of indigenous peoples and [<u>the knowledge, institutions and values of]</u> local communities and promoting their participation in environmental governance often enhances their [<u>quality of life] [well being]</u> , as well as nature conservation and restoration [<u>and sustainable use]</u> .
D5S1V3	20190502_132410	Friends of The Chair 1	Recognizing the rights [, in accordance with [national legislation] [and international obligations, <u>as applicable]</u>] knowledge (<u>including innovations and practices</u>), institutions and values of indigenous peoples and local communities as well as promoting their participation in environmental governance often enhances their [quality of life] [<u>well being</u>], as well as nature conservation and restoration [<u>and sustainable use</u>].

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

Version	Date / Picture	Place	Phrase
D5S1V4	20190502 _133352	Friends of The Chair 1	Recognizing the <u>[distinct internationally recognized rights of indigenous peoples, and local communities]</u> [, in accordance with [national legislation] [and international obligations, as applicable] [rights of indigenous people], and the knowledge (including innovations and practices), institutions and values of indigenous peoples and local communities as well as their participation in environmental governance often enhances their quality of life, as well as nature conservation and restoration and sustainable use.
D5S1V5*	20190502 _134618	Friends of The Chair 1	Alternative 1: Recognizing the internationally recognized rights of indigenous peoples in accordance with national legislation as applicable and the rights of IPLCs as recognized under national law... Alternative 2: Recognizing the distinct rights if IPLCs in national legislation and international obligations, as applicable, as well as the knowledge...
*At this point the lead author feel they feel stuck and propose to rewrite the sentence from scratch; these are the propositions to replace the beginning of the phrase.			
D5S1V6	20190502 _135952	Friends of The Chair 1	Recognizing the <u>rights, in accordance with [national legislation] [and international obligations, as applicable]</u> of indigenous peoples and the knowledge, innovations and practices, institutions and values of indigenous peoples and local communities as well as promoting their participation in environmental governance, often enhances their quality of life, as well as nature conservation and restoration and sustainable use.
D5S1V7		End of Friends of The Chair (Non-paper 6)	Recognizing the knowledge, innovations <u>and</u> practices, institutions and values of indigenous peoples and local communities and their inclusion and participation in environmental governance, often enhances their quality of life <u>as well as nature</u> conservation, restoration and sustainable use which is relevant to the broader society.
D5S1V8		FINAL	Recognizing the knowledge, innovations, practices, institutions and values of indigenous peoples and local communities, and <u>ensuring</u> their inclusion and participation in environmental governance, often enhances their quality of life and the conservation, restoration and sustainable use <u>of nature,</u> which is relevant to broader society.

Legend of the text annotations in the tables and pictures

My annotations:

- underline = removed in next version
- double underline = new compared to previous version

Annotations made by the secretary (as can be seen in the pictures) and reproduced in the tables:

- The text into brackets is the text which addition has been proposed by a representative but hasn't been accepted yet by the others
- The strikethrough text is the text which deletion has been proposed by a representative but hasn't been accepted yet by the others

Annotations made by the secretary (as can be seen in the pictures) but not reproduced in the tables:

- The text highlighted in yellow is the sentence currently being discussed
- The text highlighted in purple has been agreed during the FoTC but has to be discussed again in plenary

When the small group of representatives that felt concerned by the paragraph (from not more than ten countries) gathered to discuss it, three main interrelated issues emerged regarding the first sentence: the first concern the issue of the recognition of rights in itself; the second was the recognition, acknowledgement or distinction of the differences between the international and the national levels as well as the different national

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

contexts; and the third was the inclusion of the rights of the “local communities” (LCs) alongside those of indigenous peoples (IPs). This last issue, uncovering the complex intertwining of the legal scales, was summarized as follows in the ENB: “on recognizing the rights of IPLCs as a way to enhance nature conservation and restoration, delegates debated at length how to reflect that indigenous peoples have different rights than local communities and that such rights are recognized in international law but must be implemented through national law in most countries⁵²”.

The debate around the differences between IPs and LCs emerged when Guatemala asked that LCs be mentioned in the bold part of the paragraph (usually the first or first two sentences of the paragraph, which are summarizing it) alongside the IPs. The CLA (the Coordinating Lead Author of the chapter of the report currently discussed) answered negatively, because the problem was that they didn’t have the same legal status and that it would therefore not be accurate. Supporting the request of Guatemala, the representative of South Africa said that the problem with the absence of LCs in the bold paragraph was that in many countries there wasn’t any IPs and that it was important to consider the practices of the LCs there. The USA then raised the issue of the differences at the international level of the recognized rights of IPs and LCs. Bolivia agreed but insisted that, although they were different, both had rights, and therefore suggested adding “as applicable” after “international obligations” (D5S1V3), changes that were closely monitored by the French delegation. There was then a debate between the authors and delegations to establish whether LCs actually had international rights, but Bolivia said that “if some countries say that international treaties don’t apply in their countries that’s fine, but for example in Bolivia LCs have rights, even collective rights, and it is therefore important to accommodate the different rights of the different countries”, which led to the idea of the “distinct internationally recognized rights of indigenous peoples and local communities” (D5S1V4). Since the rights of IPs and LCs were different at the international and national levels, an author proposed to add a coma (D5S1V4). The representative of South Africa also insisted that the LCs stay in the first sentence since in Africa, a continent unique in this regard, there wasn’t really any differences between them and the IPs, since “everyone is local”, she said laughingly, and that the LCs can sometimes have collective rights there as well. To try to unravel the debate, two alternative propositions for the beginning of the sentence were made (D5S1V5), but the impression of getting even more stuck made the CLA intervene by saying that they should not lose sight of the initial meaning of the sentence, which is that there are evidences in the literature that when some rights are recognized to IPs it is beneficial to the biodiversity. Finally, the only solution that has been found (and that seemed quite likely considering the tone of the discussions) was to delete the reference to rights (S1V6), allowing the approval of the sentence by the working group, although it still had to pass through the discussion in plenary (which led to D5S1V7 and then D5S1V8), and the continuation of the discussion to the rest of the paragraph.

Beyond the problem of language and grammar that has to be found so that the text can be adequately read and understood by all parties, this sequence demonstrates the complexity of dealing with concepts or categories that might have transversal ramifications in their understanding, definitions, use and legal status in a number of other spheres and places at various scales. The desired universality of the scientific statement has to accommodate and articulate a wide variety of historical, ontological, epistemological and political differences regarding who is “indigenous”, who is “local”, what it means and what it implies. But, on the other hand, it

⁵² Earth Negotiations Bulletin (ENB), Volume 31 Number 47, 3 May 2019, IPBES-7 Highlights.

could be argued that, even if the recognition of rights could be considered to be vague and not referring to anything in particular (it is not even clear if it talks about rights existing in principle, for example in international conventions, or about granting new rights), the problem wasn't its vagueness or variability but that it was still considered too clear, specific and sensitive in its implications, to the contrary of the recognition of "the knowledge, innovations, practices, institutions and values" which didn't generate the same discussions.

a) On the relation between rights, biodiversity and the politics of international institutions

If the link between "rights" and positive impacts on biodiversity (and the notion of "rights" more generally) would have made its way through in the IPBES GA, it would have been a profound evolution with regard to the previous intergovernmental texts on biodiversity and a great victory for the indigenous peoples, since the recognition of the diverse rights they have over the territories they inhabit is a recurrent demand in many countries and within the international institutions. This is notably the case within the CBD, which Article 8(j) had been praised for its acknowledgment of Indigenous Peoples in relation with the biodiversity. This article led to the formation of a special working group of the CBD called "ad hoc open-ended inter-sessional Working Group on Article 8(j) and related provisions of the Convention on Biological Diversity" — or WG8(j) — that publishes regular reports. But although the NGO Forest Peoples declares on the page of its website dedicated to the IIFB⁵³ that "the CBD is an important international environmental convention, because it contains numerous passages that recognize traditional resource and knowledge rights, the most important of which is Article 8(j)", in fact the article in question doesn't mention the concept of "rights" but only "knowledge, innovations and practices". In fact, the only rights that the CBD mentions are the intellectual property rights and the fact that the contracting parties of the convention are "reaffirming that States have sovereign rights over their own biological resources."

The final report of the 11th session of the WG8(j) states that one goal of the working group is to "facilitate the full and effective participation of indigenous peoples and local communities in the work of the Convention on Biological Diversity, regarding their traditional knowledge, innovations and practices relevant for the conservation and sustainable use of biological diversity". This goal sticks exactly to the words used in the article 8(j), without making reference to "rights". But despite this negation of the relation between the work of the WG8(j) and the issue of rights, the International Indigenous Forum on Biodiversity (IIFB), involved in the discussions of the working group as well as in the CBD and the IPBES, considers that they should ensure the participation of indigenous peoples in the CBD because "as a body of the United Nations, can have an international impact on the recognition of the rights of Indigenous Peoples." They also consider that their participation in the WG8(j) may be used for "advocacy with the aim of positioning the various demands of the indigenous peoples and underscoring the recognition of traditional knowledge and rights⁵⁴". The description of their purpose (again on the webpage of the NGO Forest Peoples) indicates that they "help coordinate indigenous strategies at these meetings, provide advice to the government parties, and influence the interpretations of government obligations to recognize and respect indigenous rights to the knowledge and

⁵³ <https://www.forestpeoples.org/partner/international-indigenous-forum-biodiversity-iifb>

⁵⁴ Extracts of the self-presentation of the International Indigenous Forum on Biodiversity (IIFB) on their website <https://iifb-fiib.org/>

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

resources” (my emphasis). The descriptions therefore use the terms positioning, underscoring, coordinating strategies, advising and influencing, that are all referring to political actions aiming at weighting in the debates.

One example of their work to try to influence the interpretations of the terms of the convention can be seen in their Opening Statement for the 7h meeting of the WG8(j):

CBD instruments (...) in addition to human rights instruments such as UNDRIP [United Nations Declaration on the Rights of Indigenous Peoples], amount to clear obligations upon Parties to ensure free, prior, and informed consent, mutually agreed terms, and full and effective participation. (...) The notion that [the expression] “with their approval” [that is used in the article 8(j)] equates to “free, prior, and informed consent” is, in effect, an attempt of Parties to impose restrictions to a basic minimum. On its face is an unscrupulous attempt to acquire knowledge and/or genetic resources from Indigenous Peoples or local communities. The statement should clearly stress that free, prior, and informed consent is a fundamental basic for all States to respect⁵⁵.

Their influencing work aims therefore also at counterbalancing other efforts to promote interpretations less favourable to the Indigenous. In this case, they rely to do this on a chain of equivalences of definitions starting from statements or extracts of other conventions and texts that could be considered as having higher or equal legal weight than the CBD. As it presents its actions within the CBD, the IIFB show the political room of manoeuvre given by what they consider to be interpretations and that they consider to have within a specific legal and “factual” (i.e. with defined “facts”) framework. The CBD, being a convention, doesn’t mostly express scientific facts but legal agreements between the parties of the convention, so that the interpretations are purely conventional and political. But in the case of the IPBES’ reports, how to reconcile this idea that science can positively say what are the benefits on biodiversity of the recognition of the rights of Indigenous Peoples while the scope and reach of those rights depend on interpretations, conventions, political situation and will as well as power relations?

Despite the fact that the relation isn’t fully mentioned anymore in the GA report, the indigenous representatives of the IIFB working on the post-2020 biodiversity framework of the CBD considered in a video that their work is to bring attention to “the need to recognize the important role that indigenous peoples and local communities play in biodiversity conservation and sustainable use and with this should come the recognition of the rights of indigenous peoples and local communities to their territories and resources and their right to govern and manage based on their own terms⁵⁶”. The argument is that the fact that they “manage” better the biodiversity, it also validates the demands for the recognition of their rights. While the science sees it as a positive correlation, they see it as obvious, right as well as legitimate, merging the different types of argumentation as well as erasing the frontier between knowledge and ethics as political positions.

In the same video, when the video-makers ask “Why should representatives of indigenous peoples and local communities participate in the UN CBD process?”, another young indigenous responds that it is “because it necessarily brings the voices from the ground, so from those who know and who depend upon and who work with and care-for biodiversity so well to the global decision-making processes. These processes could so easily be detached from the reality on the ground if these voices are not being represented in these spaces where the

⁵⁵ International Indigenous Forum on Biodiversity, Opening Statement, Seventh meeting of the Working Group on Article 8(j) and related provisions (WG8j-7), Montreal, Canada, October 31, 2011.

⁵⁶ As expressed by a young member of the Indigenous Peoples and Local Communities’ ICCA Consortium in the video “Youth perspectives on UN negotiations of post-2020 global biodiversity framework”. Source: <https://www.youtube.com/watch?v=pLL-L4WxIB0>

decisions are being made.” Their presence, as a way to bring the voice of the indigenous youth in the international arena, is therefore important for the process to remain “terrestrial” (in the sense of Latour 2017 by opposition to “above ground”). Staying grounded, for the question of knowledge in relation to actions that may be taken, is not about the production of knowledge in the form of scientific facts but about making their voice heard, in the form of “advocating” for the recognition of their specific “values”. While this was well captured by the IPBES and the importance it tries to give to the “knowledge systems” and values of the IPLCs, the process involved isn’t as much scientific than political in the form of issues of recognition and justice. These goals nonetheless have to be reached within an institutional frame that Indigenous do not control, and while they advocate for the recognition of their own values (or their own worlds), they have to do so by adopting the language, vocabulary and types of arguments that may be the most efficient and appropriate, because it is what those formal and social institutions valorize and recognize, even if it creates a tension with the values they try to put forward. This is quite visible in the last quote above and, just to take another example, in the media release published by the IIFBES upon the publication of the GA report and which reproduces the type of language of the report: “We interact with nature every day, and we think carefully how we manage our resources — we have spiritual and sacred relationships with our natural resources, which means we must manage our lands in a sustainable way so we can pass it on to the next generation⁵⁷”. This is, of course, not to say that they compromise their values or ways of thinking, even if it is sometimes said that it is a risk, but that they strategically adapt what they say so to impact a specific audience, at the expense of occasionally peculiar expressions that navigate through multiple ontological worlds.

b) Third sentence: positive contributions which shouldn’t be affirmed too clearly

The third sentence of the paragraph D5 focuses on the ways to help IPLCs’ “positive contributions”, for which there are evidences (see the evolution of the sentence in the Table 4). Similarly to the themes that were the most problematic for some countries in the first sentence, some countries rapidly expressed their uneasiness with the promotion of the “public recognition of land, resource and self-determination rights”, which led to some first modifications during the plenary (S3V2). Still loyal to their established position, a woman from the French delegation said that they might be willing to accept to leave “recognition of land and resource rights” but on the condition that “in accordance with national legislation” be added (S3V3). Someone asked the expression to be put in another place later in the sentence, but the French woman insisted that it had to come right after “resource rights”, which therefore had to be the most problematic words from her point of view, as someone else intervened to question the actual meaning of “resource rights”. The representative from Morocco said that he was worried that “in some cases it could send the wrong message, in particular to areas where there are conflicts and where it could be used to inflate conflicts”. It is then considered that the report does send messages, that those messages may be classified between the right and the wrong, and the States representatives therefore have to ensure that as many as possible “messages” are “right”. The question that the representatives are asking themselves is therefore not so much whether the sentence is factually correct but,

⁵⁷ “MEDIA RELEASE: “Islands of nature in a sea of decline – indigenous and local knowledge, action and contributions key to saving the world’s nature””, 6 May, 2019, IIFBES, <https://www.forestpeoples.org/node/50397>

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

by putting on glasses try to foresee the variety of readings that could be made of it (i.e. the interpreted “messages”), how some groups might use it to say or claim things that could be detrimental to the interests of the state they represent. In this case, even if they might consider the statement to be scientifically true, and although it already exists in the literature and that it might be beneficial to the biodiversity, they seem to consider that it is not in their interest to leave it in the report and would rather have it deleted. As the related issues of rights, autonomy and self-determination are at the core of indigenous demands as well as often seen by the state as antagonistic and the source of an existential threat, they are also those for which the agreement on their benefits will be the less likely within a body supervised by states.

Table 4: Successive versions of the third sentence (S3) of the paragraph D5 of the GA SPM.

Version	Picture / Date	Place	Phrase
D5S3V1		Non-paper 1 (pre-conference)	The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through public recognition of land, resource and self-determination rights; the application of the principle of free, prior and informed consent; and improved collaboration, benefit sharing and co-management arrangements with local communities.
D5S3V2	20190502_104452	Plenary	The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through <u>public</u> recognition of land, resource and [self-determination] [<u>rightsinterests</u>]; the application of the principle [<u>concept</u>] of free, prior and informed consent [<u>right to address in the case of harm or damage</u>]; and improved collaboration, benefit sharing and co-management arrangements with local communities.
D5S3V3	The focus went then only on the first part of the sentence, which was the most problematic, with some subsequent propositions of alternative formulations (see Error! Reference source not found.).		
	20190502_141609	Friends of The Chair 1	The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through recognition of land and resource <u>rights [and institutions in accordance with national legislation]</u> [self-determination] [interests] ...
D5S3V4	20190502_143129	Friends of The Chair 1	Alt: The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through recognition of [<u>the different rights such as on land and resource use rights [in accordance with national legislation and international obligations as applicable]</u> and institutions] [self-determination] [interests] ... Alt 2: The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through recognition of land <u>tenure [and rights on access and use of natural resources]</u> , <u>access and</u> resource rights [and institutions in accordance with national legislation] [self-determination] [interests] ...
D5S3V5	20190502_192736	Friends of The Chair 2	The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through <u>public national</u> recognition of land tenure, access and resource rights in accordance with national legislation [and international obligations <u>agreements</u> as applicable.] [self-determination] [interests], tThe application of the [principle concept] of free, prior and informed consent [<u>in access to traditional knowledge</u>], [right to <u>redress</u> in the case of harm or damage], and improved collaboration, fair and equitable sharing of benefits arising from the use, and co-management arrangements with local communities.
D5S3V6		End of Friends of The Chair (Non-paper 6)	The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through national recognition of land tenure, access and resource rights in accordance with national legislation [<u>and international obligations as applicable.</u>] [self-determination] [interests], the application of the [<u>concept</u>] of free, prior and informed consent, [<u>right to redress in the case of harm or damage</u>], and improved collaboration, fair and equitable sharing of benefits arising from the use, and co-management arrangements with local communities.

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

Version	Picture / Date	Place	Phrase
D5S3V7		FINAL	The positive contributions of indigenous peoples and local communities to sustainability can be facilitated through national recognition of land tenure, access and resource rights in accordance with national legislation, the application of free, prior and informed consent, and improved collaboration, fair and equitable sharing of benefits arising from the use, and co-management arrangements with local communities.

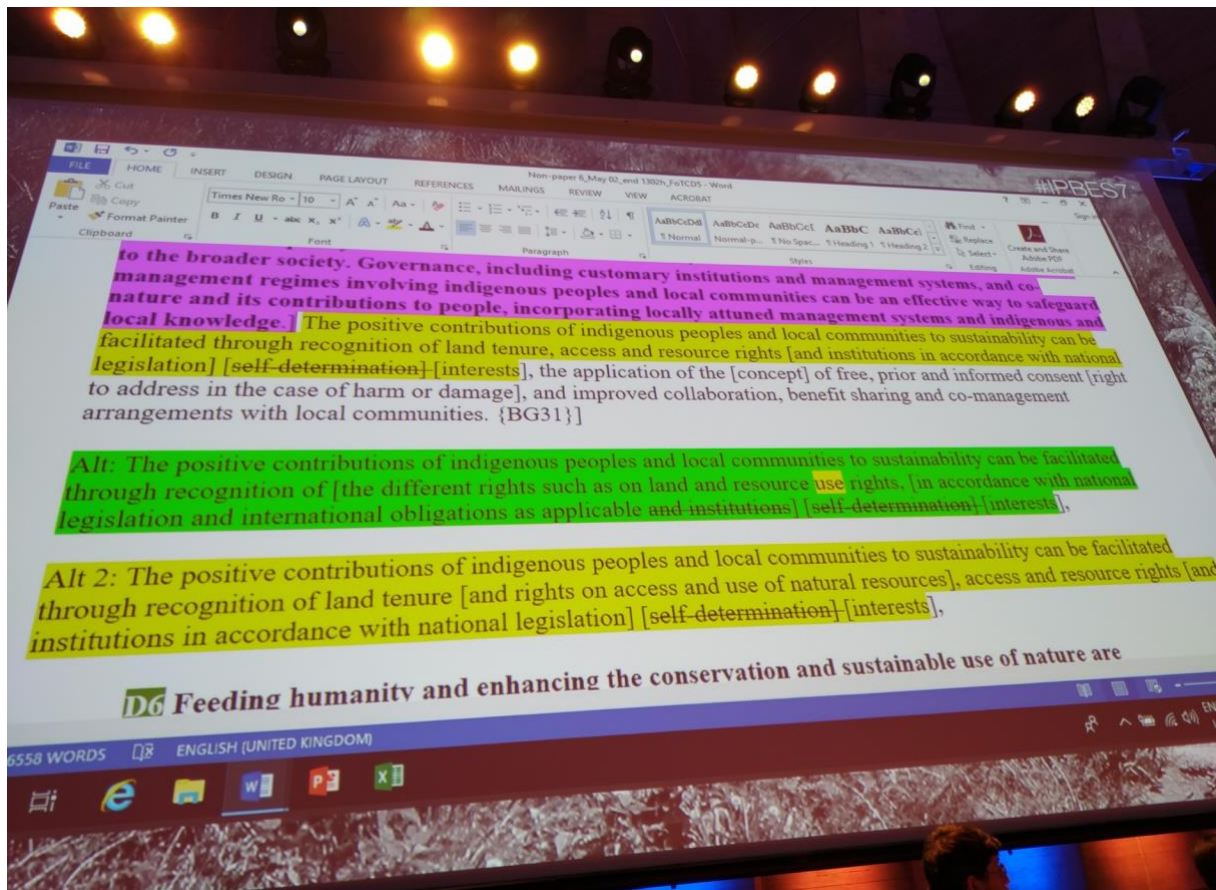


Figure 14: Alternative propositions elaborated for the beginning of the second sentence of the paragraph D5 of the SPM during the first friends of the chair session.

Although the document is in no way a type of treaty, but derives its strength from both of its “scientific” and “intergovernmental” characteristics, it sometimes seemed that it was treated like a treaty, and that in some cases member states were also desiring it to carry weight. Indeed, some of the political consequences of the report as seen by the states, became again visible when Bolivia asked a modification of the sentence for the rights to be also given in accordance with “international obligations as applicable” (D5S3V4). Argentina intervened to say that there aren’t any international obligations, while the USA said that they will reject any language that oblige, but Bolivia responded that they are themselves a plurinational state (providing the possibility and necessity of “international” relations within it) and that they also have strict instructions not to accept formulations that doesn’t imply “obligations when applicable”. The IPBES chair, who had arrived a few minutes before to see how were progressing the discussions, interpreted the situation as “a real difficulty to find acceptable language across countries”. The discussion then moved toward the second part of the sentence and the questions of the scope of the “free, prior and informed consent” (D5S3V5) and of the “right

to redress”, that the USA wanted to suppress, a move Bolivia said they cannot allow and that they will have to “consult with capital”. The chair said to the group that, despite the arguments, “a few years ago I couldn’t have imagined to have those parts [of sentences] agreed at the international level”, which again raise the question of the meaning and the weight of what is actually agreed when a scientific report that is not a legally binding is agreed, and agreed “at the international level”. The chair commented afterward less loudly that “the problem is that the countries are mixing up what the evidences are saying with what they want at the political level”.

This comment coming from the chair of the IPBES, a person who was central in the process of construction of the IPBES since its inception, raises questions: how can he appear surprised of this “mixing up”, since what he calls the “problem” is in fact the central articulation and even the rationale behind the creation of IPBES? If the interface isn’t the communication process between two distinct objects but the admission of their intrinsic relation, and therefore the continuous process of both the assessment of the dependencies and their negation by re-separation or purification, the chair might also be the guarantor of this last step. According to the description made by the chair, there would be a complex and evolving relation (“mixing up”) that varies over time, space and probably across scales, between “what the evidences are saying” and “what they want at the political level”, leading to a variety of results of their process of fusion regarding the possibility of agreeing on certain “facts”. This agreement is stopping for a moment and to a certain extent the scientific controversy and/or political negotiation, depending on how the factual discord was perceived with regard to the “concerns” it relates to. It is therefore not a simple interchange between the two considerations, but a co-becoming as linked, interdependent and actually “mixed”. This process can be convergent or divergent but most likely contradictory, non-linear and susceptible to both endogenous and exogenous factors. Seen this way, the purpose of the IPBES as an intergovernmental body is not only to generate “new knowledge” but more importantly to allow the transformation of the frames, the displacement of lines and the changes of perspectives that are weaving the statements with their wider social context, in order to generate consensus and agreement on a number of facts that will then be legitimated for their use in other types of political arenas as a basis for argumentation and negotiation.

Probably reporting on the same moment as the one described above, the journalist of the Environmental News Bulletin noted:

As time began to run out, delegates were still stuck in debates on issues that, according to one exhausted participant, “have not much to do with biodiversity, but are just political”, such as references to “gender mainstreaming” or “internationally recognized rights of indigenous peoples”. As the day went by, delegates discussing the summary for policy-makers increasingly invoked “orders from capitals” leaving participants wondering how many Friends of the Chair groups it would take to sort out the remaining issues overnight and whether the Chair will still “consider us his Friends” as one participant joked⁵⁸.

This description shows the other side of the coin of the issue of depoliticization or technicization of issues as forms of delegitimization of discussions (often denounced with regard to the so-called private sphere, or to ecological and economic issues), which is the delegitimization of certain debates in what is considered a scientific arena by their classification as political issues. The lines that are drawn only allows certain types of arguments in the determined arenas (or compared to the “cités”, but as a problem of classification?), and

⁵⁸ Earth Negotiations Bulletin, Vol. 31 No. 48, 4 May 2019, IPBES-7 Highlights.

discussants might get “stuck” if their considerations on the nature of the issue and relevant classification do not align, leading to the need for higher decision levels to intervene and the wait for the “orders from capital”.

Contrarily to the other parts of sentences where France aimed to add “in accordance with national legislation” and on which finally no agreement had been found and that ultimately had been deleted, the phrase was kept and their contribution as well. Similarly to the comments I made above, when looking closely at the meaning third sentence it is not clear what the expression adds, or if it’s not a pleonasm to promote “national recognition (...) in accordance to national legislation”. I understand that the findings aren’t actually saying anything about the fact that this recognition could or might be done through a change of articles of the constitution of a given country, but it seems that in this specific case France wanted to forbid the possibility of any changes that might require the modification of existing laws (including the Constitution), imposing a kind of unsurpassable hierarchy of the past over the present, a view limiting drastically the possibilities of change.

c) Conclusion on paragraph D5

The plenary regathered on the Friday night to go through the last still-unapproved sentences or paragraphs, including the paragraph D5 on which the chair hoped to finally find an agreement after the hours that delegates spent discussing it during two Friends of the Chair sessions. After that the CLA briefly presented to the plenary the discussions that took place, the chair asked whether the paragraph could be accepted by all parties after the removal of all the parts in brackets (D5S3V6) on which no agreement has been found, noting that “going with everything that is not bracketed would be a very elegant solution, very elegant”, by opposition of having to delete complete sentences or the paragraph itself if no agreement were to be found. Bolivia, who was absolutely opposed to the removal of the bracketed parts concerning “self-determination” and the “right to redress”, asked for the floor and her delegate started reading to the assembly a declaration saying that her country was put in front of a tough choice because they had to choose between losing a lot or losing it all and that they consider unacceptable that, despite all the advances of the indigenous, it was not possible to recognize the importance of the rights of indigenous and local peoples that are doing so much for conservation. She added that they will show flexibility but wanted to conclude by stressing their disappointment:

We have to take more into account the indigenous and local communities as well as their concerns and needs. Given that they are the historical custodians of the biodiversity that we are talking about, and that they are the developers of the genetic resources that we can now enjoy, and in many cases making profit either as individual level or at national level. Once again, we are going to agree on the deletion of the text in yellow, we are going to agree on the deletion of the text that is now shown struckthrough, as a sign of flexibility from Bolivia, but the Plurinational State of Bolivia wants to reiterate one more time our deep commitment to keep supporting indigenous peoples and local communities in the full extent of their rights and place.

The chair then thanked Bolivia and said that not only everyone appreciates their gesture but also that their battle for the better recognition of the rights and values of indigenous people, although not totally successful this time, was still very useful: “I think this IPBES [meeting] actually allowed many of us that were not so sensitive or understanding of the issue of indigenous people and we’ve made ... you’ve helped to educate me certainly, and I think lots of other people in this room. I appreciate your flexibility, and so at least we have a paragraph that I think is a step forward, as was said by Eduardo [one of the CLAs], over any other international

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

assessment. So, thank you for your flexibility.” He then passed the floor to the USA, who was requesting it: “Thank you chair and thank you Bolivia for your flexibility on this. I think that was very hard fought, we found ourselves in the position of going far beyond where we had been given leave by capital and this allows us to at least be able to explain how we got there.” They then made a minor remark on a grammatical issue, and the chair then hoped to be able to conclude (my emphasis): “With that one minor change can we accept it? [He gives a hammer blow.] So, let me say I appreciate the flexibility of all sides in getting to here. Everyone had significant compromises in different directions, so *this unfortunately is the sort of flexibility at this moment in time we need on such an important issue.*”

This sequence raises a number of questions relative to the type of negotiation happening, as well as the way are articulated the facts and their descriptions: Why does Bolivia had to make this final declaration and how to understand the response from the chair? What is the generic “flexibility” they are all talking about, on what does it apply and what its very possibility can mean? What can be this “*sort of flexibility*” the chair is referring to, and how does it relate to characteristics of “this moment in time”?

First, the declaration of Bolivia could be considered as a means to renounce to the changes they were proposing by showing the effort made in order to oblige others to match it in the other direction. This interpretation could be confirmed by the immediate intervention of the USA, which counterbalance the deception of Bolivia by saying that it is still somehow a success because they’ve won more than what they were prepared to give at the beginning (as they seemed opposed to any reference to whatever rights). The USA were therefore publicly demonstrating (or at least tried to convince of it) that the levels of efforts on both sides were somehow matching, and that it was therefore a fair negotiation with no losers. For his part, the chair affirmed that there were more gains for Bolivia and further-reaching repercussions of their interventions than what the final text seems to show. Indeed, and even if all wasn’t included, the work of Bolivia helped “educate” regarding an issue which doesn’t satisfy with the facts that *are* and *speak* for themselves, but which requires “sensitivity” and “understanding”. He therefore admits that facts are not just “out there” but relate to people depending on a number of factors, including their own perceptions and situations. Although the comment of the chair is specific to the issue of indigenous peoples, it might apply to other ones, and its reasoning goes along the lines of the “raising awareness” view or narrative and reinforce it.

The Environmental News Bulletin published the next day noted about this sequence that “the working group reached agreement on noting that the positive contributions of IPLCs to sustainability can be facilitated through national recognitions of land tenure, access, and resource rights in accordance with national legislation, with one delegation lamenting the low level of ambition that does not allow ‘real advances on the recognition of the rights of IPLCs⁵⁹.’” This comment illustrates one more time the links that are made between the questions of agreement, ambition and recognition when talking about the expression of a specific causal relation between two elements. In terms of the scientificity of the report, should their elimination allow a reader to conclude that self-determination rights *do not* facilitate the “positive contributions”? In fact, the disagreement may also not be on the proposition itself, but only on its inclusion in the report, that is its publicization and legitimization. And looking back at the discussion from this point of view, and in contrast with discussions on other paragraphs, the arguments have never been on the reality of the causal relation, but

⁵⁹ Earth Negotiations Bulletin, Vol. 31 No. 48, op. cit.

only on what should be said. What then becomes the status of this proposition if it isn't affirmed nor negated nor it said that "we've considered it but we don't know"?

Here, the flexibility that seemed to be requested isn't about believing without proofs, accept a level of ignorance or revising one's beliefs, but about the political position and ambition relative to a cause and the current power dynamics around it. The question for the governments is then: "how much of what was found out by the authors, regardless of whether we may or may not agree on its content and meaning, do we agree to put in the report?" Finally, the "moment in time" the chair is referring to could be interpreted in this case to be the current conjunction, and relation between, the state of knowledge regarding the "positive contributions" of indigenous peoples, what is at stakes with regard to the biodiversity and the mission of the IPBES, as well as the national and international contexts, including the legal and de facto positions relative to indigenous peoples and the power relations between them and the states as well as between states.

I will now complete the description that I've made of the discussions on themes focusing on IPs by other examples of arguments that have been made on some other topics during the discussion of two paragraphs. Drawing on the other kinds of changes that were intended allows to better understand how the presentation of facts dialogue with what is considered to be the limit of acceptability of changes in the statements, so to keep an acceptable level of correspondence between them and "what the science says" in general, or "what the data shows" in particular.

2.5.4 Paragraph D8: from troubled scientific causalities to the carriers of causes

The paragraph D8 describes how "land-based climate change mitigation activities" can have positive impacts but that the development of bioenergy can also be a threat in some cases. The discussions showed the strong position of some countries against a language that is too affirmative, and who were preferring some more ambiguous phrasing, revealing quite openly their interests and their relation to the expression of the likeliness of some specific causality, specifically in the last sentence. This last sentence tries to express the idea that there is a relation between certain types of ways to develop bioenergy production on one hand and biodiversity, food, water and livelihoods on the other. In the first version that had been submitted to comments before the conference, the relation was expressed in terms of "would have negative impacts" and "would threaten" (D8S4V1, see Table 5), but had then been successively corrected, as the revisions visible in the word document shows, by using "will very likely" and "can have negative impacts ... and threaten..." (D8S4V2). At the time of the discussion at the plenary, the authors presented the changes as a response to demands of "clarification of the exact circumstances in which bioenergy plantations would be negative". I'm providing here a near exhaustive description of the exchanges not only to show how long can be the discussion only for one single word but to allow the analysis of the level of detail of the discussion, the vocabulary used, the dynamics between the various actors as well as the types and variety of the arguments that they successively make.

Table 5: Successive versions of the last sentence of the paragraph D8 of the GA SPM.

Version	Description	Text
D8S4V1	Non-paper 1 (pre-conference)	However, large-scale bioenergy plantations with carbon capture and storage and widespread afforestation of non-forest ecosystems would have negative impacts on biodiversity and would threaten food and water security and local livelihoods, including by intensifying social conflict.
D8S4V2	Non-paper 1	Moreover, large-scale deployment of intensive bioenergy plantations including monocultures replacing natural forests and subsistence farmlands will have negative impacts on biodiversity and threaten food and water security as well as local livelihoods, including by intensifying social conflict.
D8S4V3	FINAL	However, the large-scale deployment of intensive bioenergy plantations, including monocultures, replacing natural forests and subsistence farmlands, will likely have negative impacts on biodiversity and can threaten food and water security as well as local livelihoods, including by intensifying social conflict.

As a country requested to change the “can” in “monocultures can have negative impacts and threatens food and water security” by “will likely”, Brazil opposed this change arguing the uncertainty that the future holds. In one of those moments during which the chair had been seemingly losing patience, he swiftly answered that this change was not acceptable because obviously “if you cut a forest to replace it by a monoculture, you *will* lose biodiversity” (emphasis in the tone of voice). Without explicitly opposing a specific country, in accordance with what could be observed with the other representatives, the European Union intervened to say that they could not accept “can” and would only go for “will likely”, although it could be fine to put “can” before “food and water” (therefore not agreeing to weaken the causality link with biodiversity but agreeing to do it with the food and water security). The chair seemed at least relieved that an agreement was found on the second verb, but for the first one he was feeling that the discussions didn’t seem to possibly go anywhere at the moment and that they would just lose too much time if they were staying on it. But when he offered to postpone its final approval until after the rest of the SPM had been approved, finally no one asked for changes and they could therefore move forward to the next paragraph.

During the final revision of the SPM on the night of the last day, and after having finally reached an agreement on the paragraph D5 about the indigenous rights, the chair kept going quickly through the rest of the document to make sure that everything was OK: “Moving along: D6, there’s something in yellow, I don’t know why, but there’s nothing there; D8 I believe is OK, I can’t see anything...” Although it is difficult to interpret whether the chair actually “didn’t see anything” about the paragraph D8 when going through it, he did seem to have paused for a second to see if someone was reacting, knowing that problems could emerge while hoping that no one would talk. As the room remained silent, he continued: “D9, I thought there was something but I can’t see it; D10, fine. So, I believe that at least we have the Key Messages completely finished, which is excellent!” The whole room then started to applaud warmly to celebrate this success, but Brazil requested the floor at this very moment. I’m reproducing here the full transcript of their intervention, to show how a dispute on a word is put in relation to specific facts, but also how the way a change is presented impacts it:

I’m really sorry but I’ve to get back to D8, for a minor adjustment. It’s really minor, as to adapt it to what was the precise language used in the paragraph 25 of the Background section. When we refer to “other SDGs that may be impacted by land-based mitigation measures”, the word the authors used is “may” instead of “can”, and it is quite understandable when we see the reference [in the full report],

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

which is section 4.5.3 which mentions a sort of trade-off and a lot of uncertainties regarding the future. So, a pretty minor change that I'd like to propose on that, and I've strict instructions on that, is to substitute the word "can" with the word "may" after "and" in the second to the last line. Instead of "can threaten food and water security as well as" it's "may threaten food", so as to adapt it to what is in Background Paragraph number 25. Thank you.

During his intervention the representative took lots of precautions of speech, seemingly anticipating that some might not be very happy with his request, especially at this last moment, by speaking very slowly and cautiously and using a tone of voice that sounded embarrassed but confident at the same time. He also tried very much to downplay the change he was requesting, repeating three times that it's "minor", keeping the requested word for the end of his intervention, after explaining what he presents as the genuine arguments, all of this while slipping in the inevitability of the change because of his strict "instructions". It can also be noted that he didn't say immediately what was the meaning of the change he was trying to make, but that he started by only indicating the word and the line of the change, and then reluctantly said the whole part of the sentence as it was before the modification he proposed and then again with the modification. He also justified the modification by saying that it was just for the sake of coherency with the background chapters, with the report and ultimately with the science as summarized by the authors.

The chair then responded to him:

One could argue we should change background 25, so to be consistent with what we all agreed in D8. I mean... There's no question... First, we had a "will" with respect to "impacts on biodiversity" and "will threaten food and water security". The compromise was to keep the "will" on "biodiversity" and to soften the issue with respect to "food and water security" and change the "will" to "can", and now you want to go even further and soften it down to "may". There's no question... In the background documents and in the chapters, we have the word "will" actually. So, going from "will" to "can" I thought that was a good compromise of governments, but to go further seems really quite inappropriate. I would really beg your indulgence with at least the "can" there. We've already softened it, but to be consistent with our evidence, I'd argue "can" is indeed the correct word. Brazil can you show flexibility?

Brazil then kept arguing that the background paragraph is using "may" with regard to impacts on SDGs, and repeated that his instructions were strict and that "it is the precise word utilized in the background section". While he clearly says that his motive is political in nature, even admitting that it comes from political imperatives, he insists that his argument is purely logical-scientific. He does as if in this case the alignment of his political instructions and the scientific logic was just a lucky coincidence. The problem with this "logic" is that in the approval process of the IPBES, and as expressed by the chair, changes in the SPM are the ones cascading in the BG and in the report, not the opposite. It could be considered more as a kind of loose commonsense proposition than a logically-procedurally rigorous one. I will not try to guess why he presented his request this way, or why it may be more effective, but it shows how the concepts, languages, strategies and logics respectively pertaining a priori to the procedural, scientific and political registries actively become so intertwined that wanting to separate them into distinct spheres that could be interfaced seem illusory.

The EU then intervened to support the position of the chair, and added considerations on the future readers, i.e. the policy-makers, and the information and message that should be sent (see the section below on the translation of science into action):

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

We are doing here a summary for policy-makers, which means we want to provide concrete and exact information to policy-makers. If we weaken it in the text, we give actually wrong information to policy-makers. We've heard the experts who've told us that "can" is an already weak term compared to the situation they've found in the analysis, so I'd really hope for the indulgence of Brazil that you can stay with the facts, the scientific facts that have been put in front of us. I mean we can write whatever we want on paper but it will not make the facts go away. We should alert our policy-makers of the facts as they are.

On the contrary, the USA stated that they would like to "align with Brazil, not because we have a strong view on this" but because they considered that there was a very marginal difference between "can" and "may". France intervened to support the EU, insisting on "the right message" that had to be sent to "our ministers"; Netherlands said that if the "scientific material says 'will', how can we go from 'can' to 'may'?", and asked again to follow the position of the authors; Sweden also supported the same position, as they saw a difference between "can" and "may" and considered that actually the US probably also saw it since they've asked elsewhere for this change. Other countries continued with these types of interventions supporting one side or the other, sometimes with some linguistic arguments and sometimes only stating that they supported the position of the EU or Brazil's, while the chair played the role of the third-party diplomat, appearing at times as the arbiter and sometimes as a conciliator (the italic indicates strong but kind emphasis in the tone of the voice): "well it's clearly splitting down the line with strong views in both directions... Would the term 'will *sometimes* threaten food and water security' work? 'Will *sometimes*'... It says that it doesn't happen all the time but *will sometimes*... I think that might be a good suggestion of compromise. Do I see any objection?" Bolivia then asked for the floor, pretending to do a very candid intervention: "I'm very sorry for this question but as a non-native speaker would you explain to us the difference between 'may' and 'will sometimes'?". As the difference was indeed not obvious for a good number of people, including the chair who was the one proposing the change, they started to laugh at the risible situation they got themselves into. "Will sometimes' sounds much nicer to me", the chair answered with a smile, and even more people laughed. "I'm trying to find a compromise between the 'will' camp, the 'may' camp and the 'can' camp, so you're correct it's quite similar, but it may be more acceptable. The art of politics is to find words everyone can agree with, even if it says the same thing in different ways." It is interesting to note first that here in this situation the chair explicitly describes himself as a politician, and therefore that one of his roles as chair giving the floor to and between the governments, as well as to the scientists, and then giving his interpretations of what has been said and looking for compromises, is to do politics, even if it means doing politics in the redaction of a "scientific" document. There doesn't seem to be any contradiction in this for him, and he might therefore sometimes have to embody the very concept of science-policy interface himself. The second point is the assumption that words that might not have a different meaning can sometimes be preferred over others, for a number of reasons including the complex nature of the language itself.

On the scientific side of the spectrum, and using a very different speech registry, including the vocabulary but also and specifically a different tone and flow as well as distinct intonations and pauses, in particular to put emphasis on the logical articulation of the propositions of the sentences, one of the CLAs then tried to clarify what was really for him the core of the debate:

I sort of try to catch up with the discussion here. I can only repeat what I think was being said before on the reporting of the different scenarios, and on the outcomes of scenarios. And the outcomes of the scenarios studied say that the vast majority of the papers that analyse large-scale land-based climate

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

mitigation efforts, which typically in the scenarios is either large forest area afforestation, reforestation or large-scale bioenergy crops... The vast majority of the papers, at global scale, tell us that there is a trade-off related to water used for irrigation and to food prices, and they're all negatives. That's what the literature says. It doesn't say "may": it's the vast majority of the papers that convey this message, we cannot change this evidence.

"OK, let me hear Brazil and let's see if we can find a solution to this", mediated the chair, to whom Brazil responded: "in our interpretation actually there are three options on the table, and they are 'can', 'may' and 'will sometimes'. Saying 'will likely threaten food and water security' is totally unacceptable for us, totally, thank you". After a small discussion the chair proposed again what he thought was a compromise, and which was "is projected", but Brazil rejected it strongly, saying: "I'm not a native speaker but to my hears it seems even stronger than 'will likely'". Following the advice of the CLA, the chair proposed "are projected in many cases", but also criticized the position of Brazil, saying to them: "what you're trying to do is having something inconsistent with the projections".

Switzerland then put its grain of salt: "sometimes I wish that IPCC and IPBES merge, we would avoid the same circus... Sorry chairman, but in the 1,5 degrees SPM D4: 'all of these models often relate on the development of large-scale related measures like afforestation for bioenergy supply which, if poorly managed, *can* compete with food production, raise food concern' ... 'high confidence', I continue reading (...). I'm sorry but we need some scientific consistency because the message we give to our governments is completely crazy, coming from one body to the other, I wish we merge these bodies, I would travel less", finishing on a note of humour, which made some people laugh, before standing up and going for a walk. The chair took advantage of this remark to insist: "and the point is: our results justify 'can'. That's the whole point. Even 'can' is softer than IPCC. To use less than a can actually makes us look like 'Why did you use that word when, in IPCC, the same governments of the world have agreed to a much stronger comment *and* it's inconsistent with your own background evidence?', which actually is much stronger. I really do feel weakening this sentence is truly intellectually inappropriate."

Bolivia, in a way that can be interpreted as a desire to show humour or simply as a provocation, then declared that they would prefer "will likely" but that, if it wasn't acceptable, they would accept "are projected", even though Brazil had already said that "are projected" seemed worse to them. Mexico intervened to support the position of the chair, and the UK wondered whether the statement was related to an observation or a modelling: "Are we referring to the results of model projections? In this case it would help to say 'however models show ...', because it could help to give some context and say that it is the models that are showing this rather than an observational change, if I understand correctly what the authors are saying". Ghana also intervened to support "are projected", "unless Brazil can explain to us the evidence, the scientific basis of changing it to 'may'".

After that, the chair tried once more to convince Brazil but using this time a language that he seemed to have refrained from using during his previous interventions: "Brazil, every other delegation is willing to accept 'can' or 'are projected', we cannot be inconsistent with our own evidence, and the same evidence that has been used in IPCC, we would look stupid, I mean we really will. We will be intellectually void. When asked by the policy-makers, or the media or the public, there's no explanation other that 'politically it was watered down'", a statement completed by the author insisting that "this area of scientific research is extremely dynamic (...) and the evidence is probably even stronger now than it was for the 1,5 degrees report". The chair then gave

the floor to Brazil, who again took the embarrassed voice he used for his first intervention: “Thank you chair, I’ve just received a response from Brasilia on that and in the spirit of compromise we can accept the previous formulation, which used the word ‘can’, but I would like to say that in the background of this document, when we talk about ‘other SDGs’, then ‘biodiversity’, the word utilized by the authors is ‘may’, and when we read section 4.5.3 of the document there are in our opinion many factors substantiating the word ‘may’ instead of ‘can’.”⁶⁰

The chair then concluded rapidly but without too much enthusiasm and without answering specifically to the comment that Brazil made: “Thank you very much, I appreciate your flexibility, that means we’re all on the same page and we have ‘can’ and [he knocks the hammer] we roll it down. D9...” Brazil, forced to a unilateral compromise, seem to have had to find at least a couple of arguments justifying the position they were supporting and now abandoning. The chair then had to pass rapidly on this capitulation, so not to put emphasis on it and embarrass the Brazilian delegation. In total more than half an hour was spent by the plenary on the change requested by Brazil. This end of sequence contrasts with the one of the debates on paragraph D5, when Bolivia showed “flexibility” because their demand was credited of a moral respectability, contrarily to Brazil’s, which initiative and reasoning seem to have appeared excessive and improper. But, while the demands of Bolivia could difficultly be considered as purely “scientific”, nor they were claiming it was, they weren’t criticized on this basis. Actually, it seemed clear for everyone at this point that the discussion was political in nature, and not even under a scientific disguise, possibly because of the stronger relation of the concepts debated with the specificities of the legal structures. Finally, it let me wonder what was the difference between the two interventions that led to the difference in their treatment. Was it the fact that people in the room know that aspects of the debate can in some cases be treated as political, while also knowing that there is a limit beyond which politics should not enter and where facts should take precedence? If so, how is decided and designed this fluctuating border in a given situation?

This debate around the last sentence of the paragraph D8 referred to the characterization of a link of causality between two events, which in themselves are not questioned but for which there wasn’t any agreement on their relation. As the ENB journalists putted it, “a lengthy debate took place on whether large-scale deployment of intensive bioenergy plantations, replacing natural forests and subsistence farmlands ‘can,’

⁶⁰ To facilitate the understanding of the argument of Brazil, I reproduce here the Background Paragraph 25, the discussed sentence being the one before last: "**The adverse impacts of climate change on biodiversity are projected to increase with increasing warming, so limiting global warming to well below 2°C would have multiple co-benefits for nature and nature’s contributions to people and quality of life; however, it is projected that some large-scale land-based mitigation measures to achieve that objective will have significant impacts on biodiversity (*established but incomplete*) {4.2, 4.3, 4.4, 4.5}**. All climate model trajectories show that limiting human-induced climate change to well below 2°C requires immediate, rapid reductions in greenhouse gas emissions or a reliance on substantial carbon dioxide removal from the atmosphere. However, the land areas required for bioenergy crops (with or without carbon capture and storage), afforestation and reforestation to achieve the targeted carbon uptake rates are projected to be very large {4.2.4.3., 4.5.3}. The biodiversity and environmental impact of large-scale afforestation and reforestation depends to a large degree on where these occur (prior vegetation cover, state of degradation), and the tree species planted (*established but incomplete*). Likewise, large bioenergy crop or afforested areas are expected to compete with areas set aside for conservation, including restoration, or agriculture (*established but incomplete*). Consequently, large-scale land-based mitigation measures may jeopardize the achievement of other Sustainable Development Goals that depend on land resources (*well established*) {4.5.3}. In contrast, the benefits of avoiding and reducing deforestation and promoting restoration can be significant for biodiversity (*well established*) and are expected to have co-benefits for local communities (*established but incomplete*) {4.2.4.3}."

‘may,’ or ‘will sometimes’ threaten food and water security, as well as, local livelihoods, including by intensifying social conflicts. Delegates agreed that it ‘can’ threaten food and water security⁶¹”.

The nature of the disagreement was therefore not of an issue with the facts, but was seemingly shaped around the moral, political and economic issues that arise from the acknowledgement of specific facts and their actual or anticipated consequences on a specific collective.

The meanings of different words or expressions that have been proposed are not mutually exclusive, although it might depend on the criteria. The propositions were “may”, “can”, “would”, “will sometimes”, “will likely”, “are projected”, “will”, and were mainly understood by the representatives as expressing a degree of causal relation, going from the possibility to the certainty. They also differ in the probabilistic nature of the causality, which can be more or less continuous or discrete, as well as in the movement of its translation from past observations to future projections. The causality is considered proven, because it was observed at least in some cases, but what is questioned is the probability that the causal link will be observed in the future.

The question that could be asked is whether it could be identically “scientifically” or “factually” correct to replace one by another, or whether some have completely different meanings. If they are all correct, although some can be less precise than others, what are the consequences that the changes make? Actually, the change requested by Brazil, a country which has obvious interests in the development of bioenergy plantations, seem to be quite characteristic, or even maybe caricatural, of the strategies of doubt mongering that have been put in place by a large number of industries during the last decades, often in accordance with the governments. On the other side, the authors seemed to be taking care of maintaining suitable and credible the crucial link between the papers, the models, the findings and a vocabulary that reflects it accurately in accordance with the shared understanding of the global English language at the moment, a language with which people of the countries of the world can sometimes struggle or disagree on the subtleties. Supporting the authors in this task, a number of actors during this debate showed their commitment to serve as gatekeepers for the overall credibility⁶² of the institution and of its work.

2.5.5 Paragraph D10: reforming the “reform” susceptibilities, so to find lexical balance

Without going into as much detail as previously, and as the last example, I will recount the discussion that took place around the first sentence of the last paragraph of the Key Messages of the SPM, which is paragraph D10. This paragraph focuses on the relation between the economy and biodiversity, as it is considered to be one of the main indirect drivers leading to negative impacts⁶³. Focusing only on the first

⁶¹ Earth Negotiations Bulletin, Vol. 31 No. 48, op. cit.

⁶² As part of the doctrinal IPBES triptych “saliency, credibility, and legitimacy”. See Charvolin & Ollivier for an analysis.

⁶³ The paragraph D10 in its final version is the following: “**A key component of sustainable pathways is the evolution of global financial and economic systems to build a global sustainable economy, steering away from the current, limited paradigm of economic growth.** That implies incorporating the reduction of inequalities into development pathways, reducing overconsumption and waste and addressing environmental impacts, such as externalities of economic activities, from the local to the global scales. Such an evolution could be enabled through a mix of policies and tools (such as incentive programmes, certification and performance standards) and through more internationally consistent taxation, supported by multilateral agreements and enhanced environmental monitoring and evaluation. It would also entail a shift beyond standard economic indicators such as gross domestic product to include those able to capture more holistic, long-term views of economics and quality of life.”

sentence, which was the only one in bold and therefore summarizing the idea of the paragraph, the changes have been the following:

Version 0 (pre-comments):

“A key constituent of sustainable pathways is the reform of global financial and economic systems to engineer a global sustainable economy.”

Version 1 (post-comments, then proposed for discussion and finally accepted as is):

“A key constituent of sustainable pathways is the evolution of global financial and economic systems to build a global sustainable economy, steering away from the current limited paradigm of economic growth.”

When the time had come to discuss the paragraph, as usual the lead author presented the comments that they had received and the subsequent changes to the text that they had made. He said that they had changed the word “reform”, because it seemed that it was compared as being similar to “reforming criminals”, and that they therefore, he said, “proposed ‘evolution’ as a more neutral word; ‘transformation’ would also work. There was also a question about ‘engineering’ and who would engineer, so we’ve changed that language. There was also a strong request saying that it was necessary, from one commenter’s perspective, to make the point about shifting away from the current paradigm of economic growth. And that is supported in at least two background chapters.” The discussion then began, with the United States making the first comment: “We would have preferred to not have this key message whatsoever, so that was our suggestion, but given that’s still here ... but well it still is, so if there’s support for that we repeat it now, but given that there may not be I think we can accept it as it is”.

The EU then asked the floor to say that they were supporting strongly keeping the paragraph and that they would like to go back to the term “reform” because “that’s an activity to do, it’s not like the global financial and economic system would evolve, I mean...”. The chair, a native English speaker, contrarily it seemed to the representative of the EU, responded that “evolution” is “an incredibly good term for that in English, but maybe it doesn’t translate well”. Bolivia on the contrary wanted to keep “evolution”, because “reform has some charges, historical and violent charges”. The Netherlands said they preferred “‘reform’, because its clearer and less confusing” but the chair noted that “the authors have several comments on ‘reform’, and that ‘evolution’ seems to be the only acceptable word without going in round and round for a long period of time”. The chair gave one more time the floor to the US: “That takes us back to our first intervention, and we were hoping to not have a lot of word changes because we had a lot of significant comments and unfortunately if we have to through all these changes I think we’re gonna bog down, we have *very strong* guidance (...) so we could not agree to ‘reform’ and, if we have to debate that, we’ll have to go back to capital to get more guidance.” After this defining intervention, a couple of other countries gave much weaker opinions, after which the chair was allowed to use his hammer and to make this recommendation before going through the rest of the paragraph: “The authors spent a huge amount of time on this paragraph, there were more comments on this paragraph than on any other, and they tried really hard to take all of your comments into account, so the fewer changes we make the better, in my opinion, and it’s probably our only hope, it really was a balancing act, to which I think the CLAs did a very good job”.

The sentence touches a politically very sensitive subject, with a potentially large impact, as it is the last paragraph and a kind of conclusion of the SPM. But the debates were not as heated as the profound meaning and potential reach of the sentence could have let imagined, especially in comparison to much stronger debates on much more specific themes. As the chair noted, much of the comments and requests for modifications had been done during the review of document happening before the plenary. It is not clear why the US accepted to keep the sentence after only a few changes and even though they originally wanted to have the paragraph (or the “message”) removed entirely and that a reference to “steering away from the current limited paradigm of economic growth” was added. They said that there wasn’t “support” for the deletion, but it is difficult to evaluate how much they tried to find allies. It is also impossible to know on which details their “strong guidance” was focusing, but they were definitely opposed to the use of the word reform, maybe for the same general reasons as Bolivia, with whom they formed a sort of temporary coalition on this even though the “charge” they might see in the word might not refer to the same historical events. For the author the word “reform” was too similar to the reform of criminals, but in any cases the word does imply a negative view of what should be reformed, which is not the case for “evolution⁶⁴”.

The discussion of the possibility to use the terms “reform”, “evolution” and “engineering” wasn’t only on their historical connotations but also focused on the sort of transformational mechanism they were implying, and in particular the sort of action that would be required (if any), and in the case of engineering, who will be responsible for it. While the Oxford dictionary definition of evolution refers to a process or a development, no indication is given of the forces generating it, which gives another perspective on its qualification by the author as “neutral”. With regard to its self-description as a science-policy interface, the debate around the choice of the relevant term is quite striking: the SPM is directed to policy-makers, and aim at urging them to act, but seem to finally be restricted to describe spontaneous unrooted transformations.

2.6 Strategies and possibilities of modification of the text

As the various interventions presented here are showing, the states’ representatives usually avoid justify their requests by saying that it will hurt their specific interests, referring mostly to scientific “facts” which become proxies of the confrontation within the many controversies that emerge during the review of the SPM. It seemed to be especially true when the motivation behind their request for changes appeared to be the protection of economic interests or politically motivated. Nonetheless, representatives expressed on various occasions that their interventions for requesting a change or opposing one were commanded by the “guidance” they had received from their “capital”, that is from the centre of their national government. In case of unresolvable conflicts between this guidance and the content of the text, if their modifications haven’t been accepted or that they didn’t successfully oppose modifications requested by others, only a “consultation with capital” can help resolve it, which may or may not render the guidance more “flexible”.

⁶⁴ Despite those strong views against the use of the word “reform” in the paragraph D10 of the SPM, no opposition was raised against its use in the corresponding Background Paragraph number 40, and despite the fact that it has also been reviewed at the plenary. For example, it can be read: “Achieving a sustainable economy involves making fundamental reforms to economic and financial systems (...)”; “Governments could reform subsidies and taxes (...)”; “Trade agreements and derivatives markets could be reformed (...)”. This difference may be based on the crucial symbolic distinction, impacting their respective potential reach, that is made between the core of the SPM and its background paragraphs, even though they are present in the same publication.

On the opposite, countries have expressed and explained more fully the reasons motivating their request when the statement trampled over their values or ontological perspectives, in particular if they considered that they should be universally recognized or at least respected, and were included in the “IPBES framework” after lengthy debates . Although they are certainly also part of the “guidance” the representatives receive, within the IPBES the ontological arguments now seem to be considered legitimate and not purely political, at least as long as they involve minority indigenous representations, views or worlds and not ones related to what could be described as the dominant modern positivist, extractivist or economically heterodox views.

The wish to transform the verb “will” to “can” and then to “may” by the Brazilian representative seem not to have been well received because the arguments that he put forward seem to be receivable as long as they stayed within usual tensions expressed on the axiological, epistemological and ontological planes or within procedural questions. As those were considered unconvincing, the only reason left was a political motivation too pure to be acceptable, that is one which hybridization had failed and the purification too easily done, or which wasn’t the produce of frictions but a unilateral imposition, or again the unsuccessful conjuration of a knowledge frontier. This seemingly shows the accepted separation between what concerns values and ontological perspectives on one hand, and the “political” on the other, at least when considering the admissibility of different types of arguments related to the modification of the text.

2.7 From science to action: fine-tuning the effects of an interface

2.7.1 The frustrating and frustrated translation of scientific knowledge into “actions”

Along the rise of global environmental concerns came the wish for a number of scientists to participate in the public debates through a stronger and more visible commitment to highlight the links between their research and ethics, which themselves would then, by appealing to shared values, be an engine for change. This is particularly visible in the ever-increasing number of calls for action published by scientists in the newspapers, by putting forward their legitimacy and transpartisanship, and the commonly accepted or desired relation between the acceptance of facts and the agreement on a course of action that Greta Thunberg made famous with her call to “listen to the science”. It thus generates frustration when it is realized that throwing facts in the global public arena doesn’t have the expected mechanical implications on ethical stances, courses of action or political decisions. Discourses on what should be an obvious influence of science on politics are also often criticized as a wishful thinking or naive representation of the dynamics that lead to political decisions since, actually, “the ‘politics of facts’ intermingles in subtle ways with the politics of interests and values” (Pellizzoni 2011). Thus incredible efforts have to be made by, for example, marginalized groups in order to have their knowledge claims and “facts” acknowledged and recognized as “true” by those in power so that those facts might be allowed to reconfigure parts of the social reality and guide political decisions.

That said, it can also be observed, among those who advocate for a “change”, concurrent discourses, analyses and arguments, between a need for “more science” or “more relevant science”, and others expressing

that the ongoing loss of biodiversity cannot be attributed to ignorance. The latter put their hopes in a need to improve or repair the transmission line between science and politics, or point out the fact that politicians put their heads in the sand or simply refuse to act due to “vested interests”, problems of “governmentality”, or the fact that power may not lie where it should. Other times the problem put forward is the agreement over the diagnostics but the complete dissensus over the means, which also relate to the troubles of setting goals more precise than very general targets.

For to the IPBES, and in accordance with many other institutions, knowledge is necessary and should help foster the change that is desired, but the IPBES as well as the different actors playing a role within it consider that some particular conditions or elements are necessary or might help this translation to occur.

The hopes that their work may ultimately lead to concrete social transformations were expressed for example during the seventh Plenary’s opening speeches of the Director General of the UNESCO, who said that “urgent action was needed to preserve biodiversity, on which cultural diversity and human security depended. The imminent launch of the global assessment would serve as a spur to such action”, and of the Executive Secretary of the IPBES, who stated that “it was to be hoped that the work of IPBES would help to catalyse global action on biodiversity, alongside that on climate change, before it was too late”. Beyond those hopes of spurring or catalysing action, the expected political effects of the GA report is also considered coming not only from its content in itself, but also because of the way this content has been produced, as expressed for example by the IPBES Chair sixth Plenary’s opening statement: “One crucial feature of IPBES assessments is that they are co-designed and co-produced, with all relevant stakeholders being involved in each phase of the assessment process from scoping, preparation, peer-review and plenary approval. The IPBES peer review and final plenary approval processes are vital to ensure ownership of the results, which can then be used for informed evidence-based policy decisions.”

2.7.2 Crafting scientific “messages” for launching an alert, but also for handy copy and paste

In some interventions, countries wanted to strengthen the “message” that would convey the SPM. In some cases it wasn’t by advocating for saying less, narrowing the reach of a statement or removing some of its parts, like many other interventions aimed to do, but it was about countries who wished to add new elements. But in many cases, while they may be true or considered true by the authors, they had been refusing to include them, although doing it very humbly by “appealing to your patience with our capacity”, because they said that their analysis didn’t cover it, or that the data they analysed didn’t back it, possibly because the research was just not done.

In some other cases, representatives of countries as well as the chair referred to the strength of the language used in the reports of the IPCC, to argue that they should be at least at the same level. At other moments they expressed their enthusiasm of going further than the IPCC, or were regretfully anticipating that people would look at them badly if they seemed too shy in comparison.

While debating on the paragraph D8, the representative of Switzerland said: “Whether we don’t say anything about specific activities or we give to the policy-makers exact and precise information. And believe me chairman I’m a typical user of those summaries for policy-makers that we copy-paste, and when it comes

to land-based climate change mitigation activities without saying what's going on, given the fact that it was mentioned in the IPCC report, we don't go very far away so, believe me, put in: 'such as natural restoration of ecosystems and soil carbon sequestration''. But the chair didn't agree, claiming that in fact the IPCC doesn't assess those elements in their models. Showing the same consideration for future readers, Bolivia also expressed the relation that should be taken into account between the scientific language and a kind of vulgarization that should be the aim of the SPM, because it has to be crafted for an impact on the politicians.

During the discussions of the paragraph D8, and as described above, the European Union had also considered necessary to insist on the fact that the document was for policy-makers, and that therefore the information provided had to be "concrete and exact", which was an argument against attempts of weakening it. But they also made clear that the document wasn't just scientific information, but that those in room had the responsibility to "alert our policy-makers".

The SPM is therefore, according to the various actors, both containing information in the form of aggregated data, but also a message which intent is to launch an alert (which is complex and relates to a multitude of derivatives). The alert therefore becomes both the reason for the process and its outcome, but is also retroactively impacting its own formulation. This therefore renders evident one particular moment in its process of transformation as it is actively pushed through a diversity of milieu and institutions. Finally, one marked tension between the multiple faces of the produced document, and which relates to the one concerning the nature of the interface, is the intertwining of the information and the message, some arguing that they are distinct while others would like to believe they are inseparable or even indistinguishable. As we will see, this tension can also be found under another form in the ways of articulating the past, the present and the future, showing different types of orientations and consequentialism.

2.7.3 An alert infrastructure that should be contained in its place

The comments and requests made by the countries also give an idea of the perceived status of the text by the different actors, not only in the sense of how scientific reports might oblige (and therefore not be only a "policy-relevant science" but scientific statements that would oblige the politics) but also in the consideration of how prescriptive they should or can be, depending on how the different actors understand the role they should play and that the report should play, and therefore the different views of the type of "science-policy interface" they want to favour, and the actions they might have to take to orient it or resist its transformation toward a type of interface that they might not want. This example therefore allows to see that behind the concept of interface, seemingly described by a number of institutions as quite straightforward, hides complex evolutionary arrangements of actors for the actual definition of the type of mechanisms it involves and its scope.

Behind the concept of "obligations" lies the legal architecture of the states and of the international relations, which is the basis on which rests the "interface". The interface is therefore not only from the science to the policy-makers so that they become enlighten to make "better policies", but also as new elements to be observed under the light of existing policies (or treaties or constitutions, etc.) and that might legally oblige the "makers" to act. One of the observers, present during a Friends of the Chair session that I've described, added their grain of sand (or their two cents) saying that "the report isn't just about reviewing scientific papers but that it is also about helping people making understand things in their countries", that I understand as meaning

that it should also be designed as a tool to be used by the civil society for discussions with policy-makers. But sometimes representatives were also worried that groups beyond the designated recipients of the document, the policy-makers, may also make use of the document and interpret “wrongly” the messages of the SPM, or that they would make too good use of the “wrong messages” that some parts may be sending and which may help them create grasps and gain leverage for transformations unwanted by governments, reason why they also discuss it so carefully. While the work of the IPBES should at least help carry “policy-relevant” facts to the decision makers, the frontiers and nature of the interfacing are always a source of tension, since it has to allow for leading to new moral obligations but not be prescriptive, “help people understand things” but not necessarily give them knowledge-power to change them.

Right before the final adoption of the SPM, the US expressed worries because some corrections of the text in the tables that had been agreed on were seemingly not reflected in the text shown on the screen. The chair admitted that the text shown was indeed wrong, but tried to reassure the US that for “the minor edits you can trust the secretariat”, a comment “appreciated” by the US but not enough to reassure them fully, because “these [corrections] in many cases are not simple technical edits, these were policy issues”. This intervention shows that countries representatives explicitly consider that the reports produced by the IPBES go beyond technical evaluations or scientific considerations, and acknowledge that not only parts of its work may overflow onto policy or political issues, but also that in many cases science *is* political, or at least may become or be interpreted as being political if they’re not cautious enough.

The carefulness of some countries, regarding certain statements acknowledging the general observed causal relation between two events in the context of a text that claim to embody the science-policy interface, comes from the mostly implicit idea (unless in the rare cases when the formulation “will” is used) that comes with those statements. Indeed, if this causal relation has been observed it could be deduced that it will continue to be, and that it should therefore be taken into account when decisions are made, or even orient them, otherwise it should or could be used by other actors to put pressure on the infamous “decision makers”.

The discussions also exposed the tension between the temporalities of the statements of the text. While it was based on the distinction generally accepted in scientific texts between the use of the past tense (observation), the present tense (general relation) and the future tense (prediction), those differences were perceived in this context as having profound implications on the possible political and legal interpretations and uses of the statements.

It also seems that the “countries” somehow see the frontier between scientific reports and political statements as being much thinner or blurrier, not only than what is generally admitted, but also than what they have collectively agreed to agree on when they validated the IPBES status. There is then a lot of room to manoeuvre and a lot of work to contend the “interface” within the limits it “should” stay; this interface has been designed very precisely for its purpose, and is not a generic one-size-fit-all articulation of power and knowledge. It has been crafted with a very clear goal in mind, along with assumptions, models and scenarios to deal with it. And it has also been incorporated in it what it shouldn’t be or become. But this is not assuming publicly the true obstacles of their theoretical functioning, and a number of actors aim at transforming, hacking it or making it work for them according to their political view of the stakes of the question debated.

The final remarks of representatives at the Plenary right before the approval of SPM often focused on the translation of the findings into political action, but all countries didn't put emphasis simply on their hopes for change. For example, the representative of Turkey expressed a view that what I would later understand as being largely shared among the countries: "Turkey reiterates the fact that this informative report serves as a policy advice based on best scientific available knowledge but does not serve as a policy prescription". This remark indeed reiterates the IPBES slogan that it is "policy-relevant but not policy-prescriptive", and on which a number of countries insist. One could maybe see good reasons in this insistence, like not become technocratic and post-political, but also a strong desire to avoid the creation of any obligations.

For Vadrot (2014), while the term "science-policy interface" was constantly used by the participants of the workshops aiming at designing and creating the IPBES, they were not referring to any specific definition nor tried to create one. It was clarified nonetheless during the process that it should produce authoritative analyses that would be "policy-relevant but not policy-prescriptive", linking it in part with issues of scientific credibility. But the reluctance (and fear) for the platform to become policy-prescriptive was also coming from what Vadrot interpreted as a concern that the power of knowledge might undermine national sovereignty, some representative even expressing the fearful thoughts that "scientific findings these days can be prescriptive sometimes, even silently" (South Africa Delegation 2010 in Vadrot 2014).

2.7.4 Performativity and conditions of success of the alert

While the schema and architecture of the IPBES consider the translation of science to policy in a number of ways, as described above, many considerations on this process are raised by actors, whether they are people from the IPBES, from other organizations or representatives of countries, in their respective media release, speeches or introductions to the IPBES's SPMs. In those interventions, they sometimes express the conditions that they consider to be required for the work of the IPBES to have a desired effect (while unveiling the undesired ones, as expressed above), and what in the work that is produced by the IPBES makes that it should have some effects, particularly at the political level.

When the Chair of IPBES finally declared, at the end of the week-long discussions, "We now finally have the approval of the SPM and acceptance of the background chapters", a round and long round of applause followed. Even for me who hadn't worked on this report, which was packed with worrying trends for some of the life forms of this planet, and who wasn't even part of the IPBES, it seemed that it had to be a collective emotional moment, and it was. The Executive secretary of the CBD then took the floor for their closing speech, in which they put forward the "clear call" they were understanding the report was making:

I feel the emotion here in the room and probably many of you have a little bit of tears in your eyes to see this fantastic work coming to its conclusion.

This report is a call that is clear, that is loud and that we need to make sure will be heard around the world. A call that will only grow and grow until we gather the determination, the strength, wisdom and ultimately the political and economic courage to act on it.

The challenging task is now though is to translate your hard work into concrete and meaningful action.

The accelerating loss of biodiversity has also untold consequences for humanity. By destroying nature, we are undermining the fundamental backdrop that enables our health, our well-being, our clean

Chap2: Keeping science, politics and ethics in equivocation: the case of IPBES and the plenary discussions of the Global Assessment

water and clean air, our food and medicine supplies, and also our social and economic prosperity. It has dramatic social and economic consequences as well. But above all, this is a great moral tragedy. It is a failure of our human species to harness our life and well-being in harmony with nature and all the other forms of life with which we share the planet.

As the report demonstrates, we have the knowledge and now we have the scientific evidence. What we do need more is stronger political will and the courage again and determination to move away from the status quo and the associated vested interests and begin to address these matters through new lenses and innovative thinking. But above all we need leadership, and you have demonstrated very well with the scientific community here, we need to hear from the politicians but we also need leadership from the bottom.

(...) What I'm trying to say with this list of high-level events is that this is the moment to act, and perhaps never in the history of our convention or biodiversity itself you know the stars did align so well to move from science to political action to business action to citizen action, to really find a way to move forward because the crisis is severe.

The chair then concluded: “thank you very much for this inspiring speech, and we all hope we can turn the knowledge we have now into action on the ground”. In their speech, the Executive Secretary of the CBD indeed expressed the hope for turning knowledge into “concrete and meaningful” action and the emotion associated with this hope, but also a number of problems that may limit this and their possible solutions. The report being a call, a first challenge for it to be heard, but then a number of qualities have to be gained, possibly through the hearing of the call but not only, which would finally build a strong willpower, first expressed in an indeterminate manner and then focused on the leadership of politicians as well as “from the bottom”. But, in conclusion, they insisted on both the severity of the crisis and the multiplication of events to see a hopeful alignment of the stars.

According to Chateauraynaud & Debaz (2017), “it is common to attribute delays and obstacles to a form of demobilization of political actors, but ontological and epistemic tensions contribute greatly to coordination difficulties”*. Indeed, in the IPBES’s Guide on the Production of Assessments (IPBES 2018), it is indicated, among the guidelines for the assessment of the degree of confidence of the facts, that a source of low confidence is “Differences in understanding of the world (decision uncertainty)”, which are associated to “variations in subjective human judgments, beliefs, world views and conceptual frameworks”, producing findings that cannot be easily aligned. But although these tensions are sometimes acknowledged with regard to the necessity to consider and include more of the IPLC knowledge into the assessments, it is viewed that the problem of the translation into policy comes mostly from the lack of political will and, while the IPBES focuses on problems of subjective divergences and bias, some of the examples they take clearly refer to irreducible political issues⁶⁵, which ontological and epistemic tensions are only two of their multiple faces.

⁶⁵ Regarding the “differences in understanding of the world”, they indicate: “Example: Effects of organic farming look different if you take the view that wild nature beyond farmland has a higher value than farmland biodiversity, and overall food production at a large scale is more important than local impacts. There are divergent interpretations/perceptions of well-being.”

2.7.5 A non-political “future we want”?

The IPBES’s “scenarios and models” brochure indicates that “with the scenarios and models, decision-makers can better plan for the future we want”. This sentence seems to rest on a number of predicates, which are that the decision makers are separated from “we”, that they are planning for (possibility instead and to the benefit of) “we”, and that the “we” not only exists without defined limits but that it wants collectively a unique and specific future. It is also not clear whether they refer to the 2050 vision adopted by the UN General Assembly at the Rio+20 summit and named “the future we want”, the “we” being the consensual international community or to a more generic one. But while it might absolutely be possible to find cases, situations, places or countries for which these statements might be considered as true, assuming that it is true in general or as a shared principle seem to no fit so well the actual diversity of political regimes and social realities it might include.

So, when looking at the stated conditions for the success of what is presented as a kind of transmission through a causal chain of the knowledge down to a better preservation of biodiversity, by the seemingly naive assumed relations that ought to sustain the mechanisms described, it can be noted the absence, like the invisibilization of the elephant in the room, of the political and social conditions required for the transformations to happen, and beyond the “leadership”, whether from the top or the bottom, that some had call for. Indeed, while the SPM of the report makes reference to the necessity to transform some economic activities and even paradigms, no reference is made to political regimes, and international comparisons notably do not include the nature of the regime, and the assessment of key political or social indicators, like transparency, freedom of speech, or inequalities, for example, even though the conservation biodiversity is sometimes put into relation with the reach of the SDGs. Also, while it is said that the land managed by Indigenous People are generally better preserved, the reasons behind this difference are not fully expressed, and especially not in terms of political organization. But seemingly naive statements are not necessarily revealing naive thoughts, but possibly more political imperatives. One can then wonder about the diplomatic and political role that those “naive” statements might play. Maybe the same way some countries are eager to make clear again and again that the reports are not prescriptive, there is a fine line between advocating for change without implying that the change is political in front of political representatives.

2.7.6 The unscriptiveness of a moral imperative to act

The IPBES media release emitted for the publication of the Global Assessment indicated that, because of its relation to a number of SDGs, “loss of biodiversity is therefore shown to be not only an environmental issue, but also a developmental, economic, security, social and moral issue as well⁶⁶”. But neither the word “moral” or “ethics” are present in the SPM, and only the concept of “values” is used in several paragraphs. It is stated in the full report (p104) that “values encompass principles or moral judgments that can lead to responsibility concerning and stewardship toward nature”. In the SPM, “value” mostly refers to the economic value while “values”, a term that could cover a wide variety of them, mostly refers to “positive” values, mostly

⁶⁶ IPBES media release, 6/05/2019, Nature's Dangerous Decline 'Unprecedented', Species Extinction Rates 'Accelerating'.
<https://www.ipbes.net/news/Media-Release-Global-Assessment>

hold by indigenous people, and never about the “negative” values that might have led us to the current situation. The only parameter that could be associated with values that is referred to negatively is the current dominant “vision of a good quality of life” that “entail ever-increasing material consumption”, vision from which we should move away.

In the first version of the paragraph D4 of the SPM, it is stated that levers helpful to move toward sustainability include: “(1) fostering visions of a good quality of life that do not entail ever-increasing material consumption; (...) (3) unleashing existing values of responsibility to effect social norms for sustainability”, or in its final version “(1) enabling visions of a good quality of life that do not entail ever-increasing material consumption; (...) (3) unleashing existing, widely-held values of responsibility to effect new social norms for sustainability, especially by extending notions of responsibility to include the impacts associated with consumption”. The modifications, changing “fostering” with “enabling”, and “existing values” with “existing, widely-held values”, show that here again the prescriptiveness of the document has been carefully crafted toward a reinforcement of already present tendencies, and not toward opening new possibilities or encourage minority values.

Audrey Azoulay, the Director-General of the UNESCO, declared, in one of the short columns that introduces the SPM in its published version (IPBES 2019c), that “This essential report reminds each of us of the obvious truth: the present generations have the responsibility to bequeath to future generations a planet that is not irreversibly damaged by human activity. Our local, indigenous and scientific knowledge are proving that we have solutions and so no more excuses: we must live on earth differently”. This statement stands out from the two much more factual and low-key statements that surrounds it, respectively from Joyce Masuya, the Acting Executive Director of United Nations Environment Programme (UNEP), and José Graziano da Silva, Director-General of the Food and Agriculture Organization of the United Nations (FAO). It starts with a quite strange first sentence, which affirms not only that it is an “obvious truth” that a responsibility toward future generations exists, but that the “report reminds each of us” of it, something that the report isn’t saying at all, probably quite fortunately for a report of this kind, but that one can only interpret as being one of the “messages”, or performatively wish that it is. The second sentence, on the other hand, establishes a link between the existence of “knowledge” and what became an inescapable moral situation in the form of a now necessary action, compared to a previously “excusable” absence of change. The morality is therefore said to be both in the previously existing “excuse” (understood as an unavoidable wrongdoing) and in the new moral imperative (“we must”) caused by the “solutions” which “existence” is now “proved” by a “knowledge”. The moral paradigm that is described is therefore considered to have then evolved due to the emergence of new knowledge.

This position allows perceiving another tension between knowledge and moral imperatives and which displaces the unstable edges of the political. As I’ve stated before, a number of authors didn’t wait for the publication of the Global Assessment to claim that the problem wasn’t with a lack of knowledge, since we already knew enough to know we should act. Therefore, while more knowledge can confirm what we knew and reinforce the imperative, putting so much emphasis on the new paradigm caused by the publication of a report opens the door as well to those who would like a confirmation that the knowledge wasn’t sufficient before, and that it may remain partial enough to put emphasis on what we still don’t know. And while the

principle of precaution is largely convoked in the discussions about the climate and its uncertainties, it appears to much less the case in relation to biodiversity loss.

For the 2020 Biodiversity Day, the new chair of the IPBES, Ana María Hernández, wrote an article published on the IPBES's website which put emphasis on the new focus on the transformation of values that the IPBES had adopted following the GA. Titled "Unite Behind Environmental Science: Transforming Values and Behaviour is as Important as Restoring Global Ecosystems", the article was also appealing to the moral responsibility deriving from the work of the IPBES: "With the publication last year of the IPBES Global Assessment Report, science has spoken: the damage we do to nature can no longer ever be justified as an externality. When we harm nature, we directly hurt ourselves as well. When we fail to act as responsible stewards of the environment, it is our future that we jeopardize⁶⁷." While the IPBES may avoid being policy-prescriptive, it definitely tries to be morally prescriptive, according to the descriptions made, or ought in the eyes of many to at least have clear moral implications (often confronting existing practices) which should then enter the realm of politics and generate discussions on the best policies to take them into account.

2.8 Conclusion

In this chapter, I aimed to show that the production of a report on the state of global biodiversity by the main intergovernmental institution aiming at articulating biodiversity science and politics had profound consequences on both what is considered as scientific and what is considered to be political. Not only its work requires constant translations between the two as well as a deep hybridization, but it also required a constant work by the actors to separate one from the other, and to elaborate theories on the mechanisms that they may hope or fear were at the core of their intra-action. This dynamic and active relation between science and politics is marked by a number of tensions which, through the processes of translation between the two, could in some instances appear to lead to both a politicization of science and a technicization of politics. One of these tensions is found in the work of the representatives, who have to scientificize their political views (when they are not ontological issues) so make valid arguments, and adopt a consequentialist view of knowledge production, leading to a careful but strong aim at redelimiting the categories of known-knowns and known-unknowns, as well as producing ignorance and doubt as appropriate. Another one poses ethical statements and moral imperatives as third parties serving as mediating intermediaries in this translation process, even if the stronger the link they create, the less it seems to need to rely on detailed facts and to link to specific policies. Another one comes from the aim of recognizing the multiplicity of knowledges without undermining the credibility of science nor opening the door for relativist translations into politics. This is also true for representatives of "other knowledge systems" which, by deploying lexical and conceptual creativity, may look for enhanced credibility, legitimacy or political weight without rendering distinct knowledge systems fully translatable in a stabilized way which would annihilate their differences.

As demonstrated in the first chapter, the concept of biodiversity was since its inception already carrying, considered to carry or hoped to carry, a preceptive baggage. While it did not exist a few decades ago, it has

⁶⁷ Ana María Hernández, 22/05/2020, #BiodiversityDay 2020 Article by IPBES Chair Ana María Hernández: Unite Behind Environmental Science.
<https://ipbes.net/ipbes-chair-ana-maria-hernandez-biodiversity-day-2020>

quickly become a term considered necessary to be diffused, as a way to educate people, and in order for change to occur through its performative impacts. This is evident for example in the Aichi Target 1, which was that “by 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably”. The importance given to this target is based on the idea that bending the curve of biodiversity loss would require behavioural change, and that communicating the “values of biodiversity”, abstractly and through ecosystem services, would foster those changes. To evaluate the progress toward this target, surveys were organized to verify the percentage of people who knew the word biodiversity and how to define it. The wish that the very diffusion of the concept would have ethical and political consequences therefore goes along an idea that the term biodiversity is intrinsically normative, but the work of the IPBES also shows a desire to strengthen its dimension of precept through the visibilization of its relations to other preoccupations. But the expected moral implications are rarely enough to provoke the desired transformations. Indeed, hopes of their decisive role on the action of politicians, technical experts and administrators doesn’t account for the interplay with power relations, that is the unequal reach and legitimacy of the arguments which aim to prioritize particular moral issues and modes of valuation.

Finally, this chapter was another step in the exploration of the relations between knowledge and ethics as understood by the actors who have to make sense of the ethical implications of biodiversity conceptualizations and experiences of transformations. This focus on the construction and expression of these relations in the IPBES will then allow to contrast the ways in which are evaluated and discussed issues linked to biodiversity loss at global level with those relating to the loss of biodiversity resulting from specific activities and that may have to be compensated.

CHAPTER 3

The global rise of biodiversity offsets and its controversies

Before moving to the establishment and institutionalization of biodiversity offsets in Colombia, it is necessary to come back on their history and international development. Indeed, the concepts on which they are based have been first crafted by actors working at the international level, including in the United Nations, the World Bank and international NGOs, like Forest Trends and The Nature Conservancy, who intended to diffuse them and have them adapted and implemented in a growing number of countries. As we will see with the case of Colombia, circulation of concepts and practices around biodiversity offsets and their implementation in several countries and institutions did not happen as mechanical translations of objectified guidelines on which everyone would agree. Quite the contrary, the difficulty to stabilize the concepts and equivalency, in part related to the concept of biodiversity but also on its varied perceptions, understanding and modes of valuation in the different countries, as well as the procedure to reach the compensation led to continuous transformations since its first design. Every adaptation has had to happen through long negotiations between institutional and economic actors, and under the pressure of many opponents. The history of biodiversity offsets is actually much less fluid and linear than the story of progress continuation through processes of ‘biodiversity mainstreaming’, ‘sustainabilization’, ‘ecological modernization’ or ‘ecologization’ is portraying.

In this chapter, I will therefore describe what biodiversity offsets are and present briefly their history. Since it is already well documented, I will mostly insist on the nature of the numerous controversies that shaped its evolution. In particular, I will describe the academia structuration (and in large part its polarization) around this instrument and across scientific disciplines. Considering this makes it quite difficult to recount biodiversity offsets’ history and make the emitted critics my own without falling into the categories of ‘defender’ (even cautious) or ‘opponent’ of offsets. Therefore, the goal of this chapter is instead to describe and understand the evolving critical dynamics that haven taken place since the concept was crafted, as well as to try to find the more nuanced approaches. I will also describe as well the criticisms and oppositions that outside academia, and in particular through the mobilization of actors around (and against) specific ‘development’ projects and their compensations. Finally, I will try to show how different types of knowledge are mobilized by the actors

to give substance to their ethical stances, as they argue over the political implications and the context in which offsets unfold.

3.1 What are Biodiversity Offsets?

Usually described as an instrument that companies and governments implement to respond to and prevent the loss of biodiversity, and in particular to reduce the loss coming from economic activities and the implementation of large infrastructures or extractive projects, biodiversity offsets are based on the idea that the impacts should be compensated through the protection or restoration of a qualitatively and quantitatively ‘equivalent’ biodiversity, generally in an area defined as ‘close’ to the site where impacts are generated. They are considered to be ‘voluntary’ when a company pledges to offset its impacts regardless of the absence of legal requirements (or beyond if they go ‘further’), or mandatory when they are legally required, generally as part of the licensing process of the projects and the environmental impact assessments (Villarroya, Barros, and Kiesecker 2014). Biodiversity offsets are often described as a way to “reconcile” or “balance development and conservation objectives” (as in Taherzadeh and Howley 2017).

A number of different definitions of biodiversity offsets have been elaborated over time and by the distinct actors and countries by whom and where they have been implemented. Those definitions are largely similar, but still include meaningful differences. In their foundational publication, *Biodiversity Offsets: Views, Experience, and the Business Case* (K. ten Kate, Bishop, and Bayon 2004), Kerry ten Kate, Josh Bishop and Ricardo Bayon (two of them working for an asset management company while the other, described as a ‘Green Economy Technical Advisor’, would later write a book called *Global Biodiversity Finance. The Case for International Payments for Ecosystem Services*) defined biodiversity offsets as “conservation activities intended to compensate for the residual, unavoidable harm to biodiversity caused by development projects”, and indicated in a footnote the meanings of both biodiversity and conservation according to the CBD. Following this, ten Kate founded the Business and Biodiversity Offset Program (BBOP), which would regroup companies, financial institutions and NGOs in order to develop biodiversity offsetting through advocacy and the development of guidelines (Hrabanski 2015). The definition then became the following:

Biodiversity offsets are measurable conservation outcomes resulting from actions designed to compensate for significant residual adverse biodiversity impacts arising from development plans or projects after appropriate prevention and mitigation measures have been taken. The goal of biodiversity offsets is to achieve no net loss and preferably a net gain of biodiversity on the ground with respect to species composition, habitat structure, ecosystem function and people’s use and cultural values associated with biodiversity. (Business and Biodiversity Offsets Programme (BBOP) 2009)

But other actors, in particular the various and now numerous states that have developed offsets⁶⁸ and companies developing their own ‘voluntary’ policies, have developed their own definitions. The IUCN Independent report on biodiversity offsets (ICMMIUCN 2012), whose ‘independence’ would not suit all delineations since it mostly advocates for some “pragmatic ways forward”, offers other examples, like the

⁶⁸ See for an overview and comparison the IUCN Global Inventory of Biodiversity Offset Policies (GIBOP), which identified more than 100 countries where offsets have been at least partially developed or are in the process of doing it. <https://portals.iucn.org/offsetpolicy/>

definition by the Western Australia Environmental Protection Authority which “defines offsets as ‘environmentally beneficial activities undertaken to counterbalance an adverse environmental impact, aspiring to achieve ‘no net environmental loss’ or a ‘net environmental benefit’”, while Rio Tinto defines offsets as “conservation actions leading to measurable gains for biodiversity on the ground, designed to compensate for the unavoidable residual impacts of Rio Tinto’s project developments on significant biodiversity”. The definition is also often shortened in the literature as the activity of “compensating for losses of biodiversity at an impact site by generating ecologically equivalent gains elsewhere” (for example Maron et al. 2012). Finally, in Colombia, the ‘compensations for biodiversity loss’ are defined as

actions that aim to compensate biodiversity for negative impacts or effects that cannot be avoided, corrected, mitigated or substituted and that lead to biodiversity loss in natural terrestrial ecosystems and secondary vegetation; in such a way as to guarantee the effective conservation of an ecologically equivalent area where a permanent conservation strategy and/or its ecological restoration can be generated, so that when compared to the baseline, a no net loss of biodiversity is guaranteed.* (Ministerio de Ambiente y Desarrollo Sostenible 2018)

The definitions therefore vary according to the reference they make to the mitigation hierarchy, and in particular in relation to the ‘unavoidability’ of impacts, the measurability of the actions of compensation as well as their types, their locations and their duration in time. Another important difference lies in the descriptions of the biodiversity that would be compensated, the BBOP putting forward various ecological characteristics as well as “people’s use and cultural values” (something that, as we will see, could be mostly considered as a statement of good intentions), while others refer to ‘environmental impacts’ or the types of ecosystems and vegetation that will be taken into account. Finally, those characteristics are used to define the ‘equivalence’ of the compensation, when it is mentioned, which then serves to set a goal of ‘no net loss’ or ‘net gain’.

3.2 History of environmental compensations

The idea of compensating a given action on ‘nature’ is not new, in particular with the idea of the necessary maintenance of the possibility of getting access to a number of resources and counterbalancing some pollutions. Nonetheless, fundamental and heterogenous transformations have taken place over time in relation to the nature of what had to be compensated, the reasons for its compensations and its modes of compensation. For example, as we will see in the case of Colombia, trees are not just undifferentiated elements with stabilized ontologies, but vary depending on whereas their status is of being a wood resource, earth stabilizers, habitat of protected moss species, or part of endangered ecosystems.

The envisioning of the possibility that some effects might not be compensable, or that the risks or uncertainties were too high led to the emergence of the principle of precaution. But, here again, shifts between modes of accounting and awareness of specific aspects, along with disparities of ecological distribution benefits and impacts, and the ongoing controversies and contestations, results in the fact that the trajectory of issues put forward cannot be flattened in a linear and homogenous timeline, which is on the contrary full of contradictory movements and unpredicted turning points, often following events that proved to be of reconfiguring magnitude.

Normatively speaking, the emergence of the concept of compensation of environmental impacts (which differ from environmental reparations, which usually relate to ‘unpredictable’ impacts due to accidents, for example) emerged with the concept of ‘mitigation hierarchy’. Designated as the basis of environmental impact assessments in a number of countries (since 1969 in the USA with the National Environment Policy Act, 1976 in France with the Law on the Protection of Nature, and 1993 in Colombia with the General Environment Law), it affirms that the assessed impacts should be, in order, first avoided, then reduced, then mitigated and only those that remain should be then compensated. The regulation of this compensation nonetheless happened sometimes much later (in 2012 in Colombia and regulated lightly in 2012 but reinforced in 2016 in France) with regard to the impacts on biodiversity, even if more specific obligations of compensation for protected species had been enacted earlier.

Following its first mention in the Clean Water Act of the USA in 1972 with regard to the compensation of wetlands, the concept of ‘no net loss’ has then been implemented through the market-based instruments in the 1990s in the form of habitat banking and species banking (Robertson 2006). This led the way to the expansion of a ‘liberal environmentalism’ policy paradigm which would advocate for its successful articulation of environment protection and free market, “seen as a way to contain the wave of environmental deregulation without causing an uproar on the side of business interests’ representatives” (Bonneuil 2015). The logic behind habitat banking, which creates a market for the exchange of credits between companies who have to compensate their impacts and ‘habitat banks’ which are selling them, has then strongly inspired the development of biodiversity offsets (Benabou 2014). But the instauration of biodiversity compensation ‘banks’ and markets, privileged by the private sector, remained marginal, as many countries privileged direct compensation by the companies near the impacted site. A number of countries, including France (the Cossure ‘Reserve of Natural Assets’) and Colombia, launched ‘pilot sites’ for biodiversity banking, but the difficulties encountered, in particular to find buyers of the credits, make the fulfilment of their promises⁶⁹ still long overdue (French Senate 2017).

3.3 Making the case for biodiversity offsets

Let’s start by describing the way Kerry ten Kate presents and frame both biodiversity offsetting and the context within which they become relevant or necessary, as she did during a presentation in 2015⁷⁰. In this presentation, made for a TEDx session of the University of Stirling in the UK, and therefore for an audience mainly composed by academics and students, she wanted to convince not only that biodiversity offsets are a solution, but that they are creatively resolving the problem, since they emerge from “thinking out of the box”, as she invited the audience to do with her. According to her, the dilemma is that, on the one hand, biodiversity is shrinking despite being “essential to all of us”, in particular in the developing countries where people both entirely rely on biodiversity and most suffer from its degradation and pollution. On the other hand, “we’d also like a healthy economy giving us jobs and goods and services”. So the problem posed was one of

⁶⁹ The development of those banks requires a sustain activity from its promoters to convince of its potential benefits, often relying on promesses of utility and innovation. See for example : Sites naturels de compensation, un outil prometteur au service de la biodiversité, Commissariat général au développement durable Direction de l’eau et de la biodiversité, 2017.

⁷⁰ This presentation, “Think Net Positive | Kerry ten Kate | TEDxUniversityofStirling” can be watched here: <https://www.youtube.com/watch?v=kBnTs9HSfhg>

“reconciliation” between the two. She then advocated both for preventing harm as well as for encouraging “developers to take an extra step beyond what’s typical today to offset their residual impacts”. As she highlighted though, unfortunately, “the problem is that really top-notch avoidance and high-quality biodiversity offsets remain the exception and not the rule”.

She then mentioned the widely discussed (and controversial, as I will briefly show later) ‘pioneer’ Rio Tinto’s ilmenite mine in Madagascar, describing the work of the company in favour of the avoidance of impacts and its offsetting projects, which was an “economic sacrifice” by the company that is really important for the Malagasy biodiversity. The pivotal argument to show the ‘gains’ of biodiversity that balances the ‘losses’ caused by the project, and that is quite usual for the justification of biodiversity offsets, is the counterfactual scenario: “I must say that without this conservation activity it’s extremely likely that much of this forest would be degraded and deforested over time through other pressures particularly slash-and-burn agriculture which has been a cause of loss over many years in this area”. It should be mentioned that this description bears troubling similarities with the widely critiqued ‘deforestation narrative’ that has been developed in Madagascar since the French colonization in the 19th century (Amelot 2017; Kull 2000). Therefore biodiversity offsetting has to go forward, and ten Kate describes three areas where progress should be made. The first one is to “build public support” to answer the “legitimate concern” of people afraid that offsets could be a licence to trash that doesn’t acknowledge the “plenty of situations in which it is plainly impossible and unrealistic to undertake biodiversity offsets”. Then, it should be built “political will” to allow going beyond the insufficient voluntary offsets and taking into account the cumulative impacts by strategic planning. Finally, she argues that “we need a breakthrough”, in particular considering that “we all want to eat and travel and use our smart phones, so we need to take responsibility for our preferences and come forward with practical suggestions”, and that this will come from our common work to achieve “planning for a net positive impact”.

But while Rio Tinto committed to a “net positive impact” strategy in 2004 for its mining activities in Madagascar, the strategy was abandoned in 2016 due to financial issues and the fact that it was falling behind its pledges⁷¹. In any case, for some researchers, taking the Rio Tinto mine in Madagascar as an example of a positive evolution of the taking into account of companies’ responsibility toward biodiversity is very problematic and should instead be considered to be “a cautionary tale”⁷². For example, a research paper by Caroline Seagle (2012), published three years before ten Kate’s 2015 presentation, indirectly referred to its activities as in line with the ‘Malagasy deforestation narrative’, in this case insisting on the biodiversity scarcity to better shed light on the company actions aiming at saving the biodiversity from the threat represented by the local population. Using a vocabulary indicating clearly her position on the political spectrum, she also showed “how local Malagasy land users are incorporated into new forms of inclusion (into the neoliberal capitalist economy) and exclusion (from land-based, subsistence activities) resulting from private sector engagements in conservation and sustainability”.

In 2003, twelve years before promoting “net gain” in her TED presentation, Kerry ten Kate was working for Insight Investment, an asset manager promoting corporate responsibility and the creation of biodiversity

⁷¹ Rowan Moore Gerety, July 2019, The Ecologists and the Mine, Scientific American.

<https://www.scientificamerican.com/article/the-ecologists-and-the-mine/>

⁷² Malavika Vyawahare, 21 June 2019, The mine that promised to protect the environment: A cautionary tale, Mongabay. <https://news.mongabay.com/2019/06/the-mine-that-promised-to-protect-the-environment-a-cautionary-tale/>

markets, and she did another presentation at a conference in Switzerland called “Beyond Carbon: Emerging Markets for Ecosystem Services”. This conference was organized by the Katoomba Group, an “international experts’ working group promoting conservation and advancing community livelihoods through markets for environmental services” and supported by the recently created NGO Forest Trends, which would later organize the Business and Biodiversity Offsets Programme (BBOP). Her presentation⁷³, about the advancement of her investigation into the extension of already existing offsets (like habitat banking focused on endangered species) in the USA and the UK toward the wider ‘no net loss’ biodiversity offsets, also started with inviting people to “think outside of the box”. She was considering the potential benefits both for conservation and business, as well as the “scientific, logistical and political hurdles to cross”. In another presentation during the same conference, named “Influencing markets through engagement on biodiversity: a mainstream investor’s perspective⁷⁴”, she presented the risks and opportunities quite differently as she would later do, considering also the difference of audience. Here the risks were listed as “Strategic issue: access to new sites; Reputational risk / licence to operate; Liabilities; Operating costs and delays” and the opportunities as “Rapid concession/permit negotiations; Favoured partner; Smooth & efficient operations; Support from staff & stakeholders”, therefore already drafting what would later be called in subsequent publications the ‘business case for biodiversity offsets’.

3.3.1 Aligning business and biodiversity

Similarly to what led to the crafting of ecosystem services, that is the idea that the ecosystems would only be preserved if we were able to show the benefits that are obtained from their proper ‘functioning’, it was considered that to convince companies to become partners instead of opponents of biodiversity offsets, and in a first phase to convince them to commit to voluntary offsets, it was necessary to show them both the risks and the benefits that they would obtain from it.

This development goes along with the growing number of conferences and publications from the ‘business and biodiversity’ community of experts, formed not only by business actors but also of conservation NGOs, environmental consultancies and state agencies, and aiming at the mainstreaming and footprinting of biodiversity or the development of natural capital accounting, under the impulse of The Economics of Ecosystems and Biodiversity (TEEB) initiative (Benabou 2014; Büscher 2013). Those approaches consider that axiological valuations are not ‘efficient’ and that ‘pragmatic’ solutions have to be developed, leading to the extension of the field of economy through ‘internalization’ of the unvalued natural goods and services into it, supposed to allow the nature to benefit from economically rational decisions. Therefore, instead of considering alternative modes of valuation, one needs to translate them and superimpose their ontological, axiological and ethical plans with economic value. This thus follows the arguments of the so-called ‘tragedy

⁷³ ten Kate, K. 2003, Biodiversity offsets: Mileage, methods and (maybe) markets. Background paper for discussion at Katoomba VI private meeting “Beyond carbon – emerging markets for ecosystem services” Locarno, 1 November 2003. https://web.archive.org/web/20040726211344/http://www.katoombagroup.org/Katoomba/meetings/ppt/Switzerland_2003/Shows/Kerry%20ten%20Kate_offset%20%5BRead-Only%5D.pdf

⁷⁴ ten Kate, K. 2003, Influencing markets through engagement on biodiversity: a mainstream investor’s perspective. Background paper for discussion at Katoomba VI private meeting “Beyond carbon – emerging markets for ecosystem services”, Locarno, 30 October 2003. https://web.archive.org/web/20040726163010/http://www.katoombagroup.org/Katoomba/meetings/ppt/Switzerland_2003/Shows/Kerry%20ten%20Kate_biodiv%20%5BRead-Only%5D.pdf

of the commons', on the basis of which neoliberal actors have advocated for the privatisation of the resources with a certain success, despite the weak empirical support and what Boisvert et al. (2004) called the new resource economy's little arrangements with reality. There is also a lack of evidence, even from the point of view of economists, that biodiversity offsets can enable the cost-effective conservation claimed by their supporters (Boisvert 2015; Vaissière and Levrel 2015).

But those transformations generate tensions and the recurring need for the business sector to claim its good faith, as I have been able to observe during the 'Global Partnership for Business and Biodiversity' conference that I've attended in Paris⁷⁵ and which focused on mainstreaming biodiversity into the private sector. During this conference, a number of companies presented their actions toward a better integration of the preoccupation for biodiversity into the planning of their activities, a large part of which consist in developing indicators. As the representative of Kering (a French group claiming leadership in biodiversity accounting) explained while detailing their choice to go with the biodiversity impact metric from the Natural Capital Impact Group, "what is it that we're going to measure about biodiversity because for a corporation if you're not able to measure you're not going to be able to do anything about it". Beside the group's acknowledgment of planetary and biodiversity boundaries, this decision to review its practices is motivated by the 'vision' of Kering's CEO, François-Henri Pinault, whose following quote was prominently placed in the first slide of the presentation: "more than ever I'm convinced that sustainability can redefine business value and drive future growth". Later in the conference, a person from the public made a remark to the panelists, saying that they were talking about biodiversity and mining without saying that mining is causing the loss of biodiversity in the first place. A representative of the UN Environment Programme also part of the panel replied that this question was basically misplaced, since "it is the responsibility of all of us to reduce the energy we use, so companies are not responsible". But the Kering's representative recognized that there were challenges linked to monetization, since its goal wasn't to sell nature. Nonetheless, the advantage is that "natural capital is about showing to us our dependencies, it's about creating a language to show why biodiversity is relevant for businesses", and that the problem is also "the economic paradigm since, like it or not, we have to use a language that people use and talk about to show why biodiversity is important across sectors".

As the 2015 presentation of ten Kate as well as the growing implication of companies convinced that it serves their interests exemplifies, conservation is more and more considered to have to be included in the capitalist developmentalist logic instead of in opposition to it (Benabou 2014), a tendency which has been described as neoliberal conservation (Büscher et al. 2012). In this regard, the position of the NGO The Nature Conservancy, whose employees are prolific writers of scientific papers on biodiversity offsetting, and who had, as we will see, a prominent role in the development of biodiversity offsets in Colombia, is quite paradigmatic. Indeed, it portrays 'development' as necessary for human well-being, but also has having to be balanced with conservation, and biodiversity offsets as "one important tool for maintaining or enhancing environmental values in situations where development is sought despite detrimental environmental impacts" (Kiesecker et al. 2009). For Benabou (2014), this sets a stage "where economic growth is seen as both desirable

⁷⁵ The Global partnership for business and biodiversity was initiated by the CBD to encourage the implication of the private sector in the conservation of biodiversity. The 7th meeting for the Global Partnership for Business and Biodiversity took place at the National Natural History museum in Paris, France on 23-24 November 2017.

and inevitable, and thus where the course of action, as far as conservation is concerned, is to accompany this growth by managing its ecologically damaging side effects”. This position is finally quite close from the those expressed by a large number of academic actors (see below the part on the structuration of the academic field).

The main pillar of the business case for biodiversity is that, since companies depend on biodiversity, its loss represents a business risk (Büscher 2013), and its preservation through biodiversity offsets then becomes a risk management strategy that would become required by major financial institutions, and in particular the World Bank’s International Finance Corporation (IFC) and other institutions that would agree to its standards by abiding to the Equator Principles in 2006 (Benabou 2014). Finally, the business case for biodiversity offsets was developed in the 2004 publication, which detailed benefits regarding: the obtention of a project’s licence to operate, the reduction of reputational risk, enhanced regulatory goodwill, a facilitated access to capital, lower costs of compliance, new market opportunities, a first mover competitive advantage and the power to influence regulation, the possibility to benefit from a ‘clean break’ (that is the transfer or reduction of potential liabilities), and an enhanced employee satisfaction and retention.

But the making of this business case is considered by some researchers to far beyond their stated utilitarian translation of biodiversity objectives into a language that appeals to businesses: the neo-liberalization of nature conservation may literally transform the objectives themselves through the transformation of the means to reach them (Evangelia Apostolopoulou and Adams 2015; Sullivan 2017).

Contrarily to those positions, other academics, like Smith et al. (2019), lament the lack of emphasis on the contribution that businesses can have (and already have, “often without realizing”, they underline) to reach the strategic goals of the CBD, which frame, inefficiently it seems, “biodiversity loss (at genetic, specific and ecosystem levels) as an environmental issue and embed biodiversity protection, restoration, and sustainable use within social and economic development”. By “reframing the biodiversity goals for the private sector”, on the basis of recommendations made by business representatives during CBD workshops “that post-2020 targets be expressed in simple terms (e.g., the language of risk and opportunity)”, they hope to support the increase of business engagement that the post-2020 biodiversity framework will try to achieve. Among other benefits, they express that “actions can deliver reputational incentives: Kering and the Python Conservation Partnership met consumer and civil society demands for more sustainable practices, enhancing their brand by demonstrating a commitment to sustainable products. Financial incentives are clear, with businesses seeking to de-risk supply chains by protecting the biodiversity their operations depend upon”.

The 2004 IUCN publication on biodiversity offsets was based on the assumption of a growing interest for voluntary offsets, but the subsequent dedication to build the business case in the paper and by the creation of the BBOP also showed a commitment to nourishing this interest in return as well as to expand it to other actors. Nonetheless, while businesses were considered to be the most difficult to convince, the publication also portrayed the benefits that the development of biodiversity offsets may have for other actors. For the governments, they are cost-effective ways to incentivize companies to contribute to conservation as well as to ensure that the “growing demand” of goods is met “in the context of sustainable development”; conservation groups “can use and influence biodiversity offsets to secure more and better conservation and obtain additional funding for conservation”; while local communities could benefit from “functioning and productive ecosystems” within and around the project. But, they add, one of the main hurdles to ensure those respective

benefits is finding an agreement between the actors on a “shared vision of the meaning and standards required”. Building on the “growing momentum”, the BBOP will then work to create those standards and define the meaning, as well as to establish a number of pilot projects around the world, but the agreement over offsetting will remain precarious, or virtually non-existent for local communities.

3.3.2 ‘Net gain’ and beyond

The BBOP, directed by Kerry ten Kate, was established in 2004 as a satellite organization of the NGO Forest Trends, created in 1996 by Michael Jenkins and which advocates for the development of market-based instruments linked to biodiversity, and is composed of companies, financial institutions, NGOs and government agencies with the goal to advance biodiversity offsets (Benabou 2014; Hrabanski 2015). For Benabou (2014), the BBOP formed “a relatively small community of highly connected individuals in a milieu where the frontiers between the public, private, and corporate worlds are quite permeable”, and therefore in which a like-minded community of practice would develop.

Following ten Kate’s efforts, the BBOP rapidly managed to impose biodiversity offsets as a key instrument for the preservation of biodiversity in international institutions: being first discussed in a CBD side event in 2005, it became part of the recommendations of the CBD in 2008, and it finally recognized the BBOP as an indispensable actor in 2010 (Hrabanski 2015).

By supporting pilot projects for voluntary offsets, elaborating and diffusing ‘best practices’ through numerous publications and the organization of workshops, and thanks to the charisma of its director, the BBOP largely influenced the adoption of biodiversity offsets policies by the states around the world (Elia Apostolopoulou 2020; Benabou 2014). For Apostolopoulou (2020), “the BBOP along with the growing power of consultants and conservation brokers exemplifies the heightened role of unelected actors and the emphasis on the authority of a, supposedly neutral, evaluation technoscience, in global biodiversity governance” qualified as neoliberal, anti-democratic and depoliticizing (for some perspectives on this judgement, see below the part on controversies in and outside academia).

Following the emphasis that it started to put on the ‘net gain’ at the beginning of the 2010s, the BBOP intended to launch in 2018 the “Biodiversity Net Gain Movement”, as a final contribution before the closing of its activities. Through a call for action in which “Members of the BBOP Community of Practice urge action by the international community, governments, companies and civil society” (Business and Biodiversity Offsets Programme (BBOP) 2018), they hoped to gather help to “make a real transition to Biodiversity Net Gain” that would fit their vision:

This is our vision: appropriate development in the right place planned to achieve a net gain in biodiversity, and undertaken with integrity to a high standard. Realizing this vision will require a decisive step up from ‘business as usual’ but brings many advantages: public support, reduced risks and positive social, environmental and economic outcomes. These go beyond biodiversity and can be demonstrated in natural capital assessments.

Leaving apart for now the demonstration based on ‘natural capital assessments’, the transition from No Net Loss to a Net Gain of biodiversity was already described in 2015 by Bull and Brownlie (2015) as being actually “less trivial than is widely realized”, noting important differences in the philosophy, frames of

reference, stakeholder expectations and the fact that the uncertainties will make it difficult to draw a line between the two.

3.4 Key notions of biodiversity offsetting

Biodiversity offsets are based on a set of structuring notions and principles, whose definitions vary and which are supposed to define and direct how the compensation should be done in order to reach a ‘no net loss’. Before describing their related controversies and seeing how they have been adapted and play out in the Colombian context, we have to examine the role of the concepts of no net loss, ecological equivalence and additionality, as well as and their main issues. Since these concepts are at the core of the design of offsetting policies, they are also usual entry points in the analysis done by researchers on the particularities of a national policy or to make international comparisons. Depending on their point of view, they may consider them to be mostly technical, managerial and institutional, or to involve ethical, political or ontological considerations (and struggles).

NO NET LOSS OF BIODIVERSITY

The science of no net loss took a lot of research energy (and passion) in the last two decades, and researchers from academia and NGOs, along with government employees who had to find the national appropriate recipe tried to answer questions like: What does no net loss mean? Is it even possible? How should biodiversity be taken into account? What can we calculate it? How much compensation is enough? (as in Moilanen et al. 2009) And how to make it rock-solid? Disturbed by the fact that “the most prominent existing biodiversity offset initiatives employ broad and somewhat arbitrary parameters”, Virah-Sawmy et al. (2014) proposed in 2014 a “transparent and science-based approach to measure ‘no-net-loss’”. Their method required four conditions: that the “biodiversity attributes REPRESENT ecological viability, conservation significance and human uses”, that “losses and gains of biodiversity are COMPARABLE in type and amount”, that “biodiversity gains are ADDITIONAL” and that “compensatory activities chosen for offsets site lead to PERMANENT gains”. And the biodiversity net impact was finally calculated with a formula, that I reproduce here to show what a rational biodiversity accountability looks like, calculating the sum of the $a_i - b_i$ with i varying from c to n , and where c is the value of a given biodiversity attribute of 1 to n , or the overall conservation significance index, a is the offset site(s), and b is the impacted site(s), $a_i = ((\text{counterfactual scenario} \times \text{conversion factor}) \times \% \text{ effectiveness} \times (1 - \% \text{ leakage}))_c \times (\text{offset area} \times \text{value } c)_c$ and $b_i = (\text{counterfactual scenario} \times (1 - \% \text{ leakage}))_c \times (\text{impacted area} \times \text{value } c)$. And voilà!, when compared to the results of the formula for calculating the losses it could finally be said in a “scientifically robust manner” whether there was a net loss or a no net loss of biodiversity for the projects of the Australian mining sector that have been offset.

The structuring concept of “no net loss” is the pillar of the offsetting promise, since it is what makes it possible to erase the accounting board at some point and finally say: “we’re even, nothing more to be seen here”. It is also arguably the most controversial, since it inherits the controversies regarding the other concepts which, taken and validated together, render the “no net loss” claim possible. This erasement occurs when all

the parameters, from the impacted site and from the compensation site (or activities), and in particular those establishing the ecological, ontological and economic relations that they are bearing together and that are conventionally acknowledged as legitimate proofs, are considered within the space of calculation of the compensations to determine the final output, which is whether it can be said that there is not only commensurability but a “balance”, or at least a promise of a future one, at that a no net loss of biodiversity is achieved.

ECOLOGICAL EQUIVALENCE

As shown with the formula above, in order to calculate the ‘net’ losses or gains of biodiversity, the different elements taken into account need to be fungible. A sort of ecological equivalence therefore has to be established between the impacted site, where losses will be calculated, and the offset site, which will count as gains. A common descriptive category used in biodiversity offsetting is the type of ecosystem, or of habitat when the compensation relates to a specific protected species. But the comparison is far from trivial, and many researchers looked into the issue, proposing numerous sets of ecological indicators, or suggesting that the compensation should focus on ecosystem services, or on specific values or ecological functions, all agreeing that any way of characterizing an ecosystem that remains extremely complex will remain imperfect and that the goal is therefore to find the right compromises (Elia Apostolopoulou 2020). Offsets thus require a specific idea of what biodiversity is and why it matters, while being allowed at the same time by the potentialities that the use of the term biodiversity offered as a replacement for concepts more difficult to put into calculation, such as nature and environment, or too specific, such as species.

Even if the equivalency could be demonstrated in a way that would be widely accepted, the interchangeability, or possibility of substituting an ecosystem by another, has to be justified with regard to some of its generic properties. Critics of the construction of ecological equivalencies have put forward the intrinsic value of a localized ecosystem, its irreplaceable specificities, the importance that it can have for local populations, both in utilitarian terms but also culturally, the transformation of the sense of place or the ontological transformation of nature that the substitutability might induce.

ADDITIONALITY

Another key issue in biodiversity offsetting is the demonstration of the ‘gains’ of biodiversity that the actions of compensation will achieve. Those actions are typically (leaving aside for now the more specific cases of habitat and species banking as well as of sustainable production) either the conservation of areas in good condition of biodiversity or the restoration of degraded areas. In the first case, the problem is that the areas conserved already exist are already in a good state of conservation, and therefore no biodiversity can a priori be ‘gained’. The only way to claim a gain is therefore by advancing that the preservation of the area will avert future losses, which are predicted according to counterfactual scenarios on the basis of ‘what would happen in this area if conservation actions were not taken’. As it was already illustrated with the case of the offsets of the Rio Tinto mine in Madagascar, the assumptions of those scenarios are often controversial, in particular as they rely on ongoing losses outside of the project area (Maron, Bull, et al. 2015b) and largely depends on the timeframe used as reference (Sontner et al. 2016) and are therefore considered to carry

“questionable and far-reaching assumptions, large uncertainties and potentially perverse incentives (Curran, Hellweg, and Beck 2015). It has also been suggested by some researchers that allowing this type of actions for offsetting impacts may undermine the very concept of no net loss (Curran et al. 2015).

The second possibility involves the restoration of an area, generally toward the type of ecosystem that was impacted, but here one of the main problems has been described as a ‘time lag’ between the moment of impact and the one when the area where the restoration ought to happen will be in a comparable state, and the uncertainty of the success of the restoration has also been put forward by a number of studies, although not all draw the same consequences from this fact regarding the legitimate of its use as an offsetting method.

OFFSETTING FACTOR

For both methods, it has regularly been suggested by proponents of offsets that the uncertainty of the results and of the scenarios can or should be compensated by setting offsets ratios (or multipliers) high enough to give a reasonable margin of error. At the same time, the ratios are also considered as having to somehow represent the relative importance of the different ecosystems or properties taken into account in the calculation of the no net loss.

3.5 Critiques and controversies

The type of discussions (and critics) over the design and relevance of biodiversity offsets, as most controversies, could be classified along what Chateauraynaud (2018) described as the ‘gradient of critique’, defining the evolving ‘criticality’ of the argumentative operations of the actors according to their intensity and extension. Without describing it at length, the idea is that critics can range from technical or procedural issues to the denunciation of injustices or radical critics of the system within which the original trigger of the controversy is embedded. In relation with biodiversity offsetting, it can go from the structuring concepts of the method for biodiversity offsetting as well as metrological choices, to the problem of the definition of the ratios and modes of compensation, to the implication of the local communities, the critique of the concept of compensability of biodiversity or its entanglement in wider neoliberal policies.

3.5.1 Structuration of the academic field around biodiversity offsetting

During the last 15 years, there has been a growing number of studies and academic papers on biodiversity offsetting, with a field of research far from being homogenous. It is interesting to note that, even as I was first getting in touch with the literature around biodiversity offsetting, I found striking the divisions between what could be roughly divided between the proponents of compensation, who are always trying to find how to improve it since its flaws remain obvious, and those who point out its intrinsic absurdity and the dangerousness of its conceptual, social and ecological impacts. (Actually, a third pseudo-neutral positioning for the papers, mainly from ecologists, seems to consist in doing practical or theoretical experimentations in order to find new calculation methods, or to see how compensation would work in specific biomes or countries).

Two conclusions from articles by French researchers, taken from among so many others, in a file of the Nature Sciences Sociétés journal, illustrate this division well, in this case quite softly and between economists and an ecologist:

An economic analysis in support of public policies is necessary and legitimate to study the efficiency of the system and to suggest, if possible, ways to improve it: this is the philosophy that animates the work agenda we propose here.* (Scemama et al. 2018)

The locality of a destroyed biodiversity that is discussed in an offset project is not only ecological but also evolutionary, human and social, rife with norms and values not taken care of by this technoscientific regime.* (Devictor 2018b)

At a more international level, more pronounced positions can be found between straightforward promoters of biodiversity offsetting and those calling out the neoliberalization of nature through market-based approaches (an opposition even stronger when the descriptions focus on habitat banking), as shown by the two following examples by Virah-Sawmy et al., Australian engineers and biologists, and Clive L. Spash, a socioeconomist working in Austria:

We propose a more transparent and science-based approach, supported with a new formula, to help design biodiversity offsets to realize their potential in enabling more responsible mining that better balances economic development opportunities for mining and biodiversity conservation. (Virah-Sawmy et al. 2014)

Offsets by definition are about destruction of ecosystems, species habitat and local Nature in order to benefit developers. They redefine human-Nature relationships as value capture and capital maintenance, where Nature becomes a malleable constructed human artefact. In the capital accumulating growth economy such creative destruction is the mantra of progress and development. Roll on the bulldozers. (Spash 2015)

Among the pro-compensation scientists seemed to belong full supporters who were finding there a real ‘solution’ (as well as a possible source of income, as some critiques argue), and others less enthusiasts but resigned, which considered it as worth-trying better-than-nothing (or than before) solution. Both positions usually go, as described before, with an idea that “development” is inevitable and, while they often acknowledge that offsets aren’t (yet) efficient, they argue that more research will allow them to work better in a near future, and that in any case they are a necessary tool in the current economic and ecological context.

a) Confrontation of positions on offsetting

The division in the research standpoints was again exemplified during an academic conference that I’ve attended in 2019 and during which a young researcher presenting her work on biodiversity offset, with what is generally self-described as a ‘pragmatic’ approach regarding an economic system with which it has to make do, was kindly but firmly confronted by another academic who argued that this standpoint shouldn’t be the basis for a research. The topic of the conference being ‘environmental justice’, this was anything but surprising.

Another interesting way to have a first glance at the differences in the approaches is the ways by which, usually in the first sentence of their papers, authors introduce what biodiversity offsetting is. Just to take a few examples, it can either be said that it is “increasingly being used to reconcile the objectives of conservation and development” (Pilgrim, Brownlie, Ekstrom, Gardner, Hase, K. T. Kate, et al. 2013a), or that they “involve

trying to compensate for the damage to species and habitats caused by development” (Maron, Gordon, et al. 2015a), or that it is “presented as capable of mitigating development-related harm to populations of species while simultaneously enhancing economic development” (Sullivan and Hannis 2015). While the first example states an objective increase (which they greatly participated to create), the second one talk about the intention that offsets have, and the third one puts emphasis on the narrative in which they are embedded.

After having described a first polarization in academia (which doesn't exclude intermediate positions) between realism and constructionism, Luigi Pellizzoni considers a second one dividing market optimists and critical marxists:

The second line of division finds on one side those who argue that the market capitalist model, in some 'green' version, is capable of taking into account the environmental costs that were ignored when the model was first conceived – a position often referred to as 'environmental reform' or 'ecological modernization' – and on the other those who argue, usually from a Marxist perspective, that an extraordinary expansion and intensification in appropriation and commodification of nature has occurred in the last decades, triggering a fearsome worsening of ecological problems *and* of social injustices and inequalities, and that applying to these problems the same approaches that are their principal cause is bound to fail. (Pellizzoni 2016:3)

In her 2014 paper, Marie Hrabanski (2015) also considered that criticisms of biodiversity offsets were of two types (but not coming from strictly distinct sets of actors): the “reformist criticism”, found primarily in scientific articles and is usually accompanied by recommendations, and the ‘radical criticism’, mostly based on the opposition to the ‘commodification of nature’ and which is carried out by scientists and organizations who are co-building their legitimacy by cross-referencing (while this is certainly correct, it is surprising that this isn't noted as well for the authors of reformist criticism). For the first type, she identified six types of problems or controversies that were raised by the authors: issues with reporting of offsetting projects and of the failures when appropriate, the difficulties for their assessment, problems and accuracy of fungibility, undermining of the first steps of the mitigation hierarchy, weakening of legislation, and displacement of people. The second type is found in the expression of the criticism of the possibility of an ecological capitalism, of market-based instruments applied to biodiversity and the promises to replace the destroyed nature, of those who actually benefit from the scheme, of the lack of efficiency of offsets to prevent biodiversity loss, of the impact on local communities, and that finally it is a licence to destroy.

It is important to understand the lines of division in the literature, because it shows explicitly that citing particular authors and not others (even and particularly in the case of this research) clearly favour certain positions instead of others. While I could have simply described in this chapter all the critiques and identify myself with them, or to try to defend an intermediary position, I feel that it is much more important to understand dynamically how the different positions are coevolving and how certain issues are intended to be resolved, which is also why I describe below three interlocutions between actors in academic journals. Indeed, it shows that the positions are constructed and expressed in relation to each other as well as to a context or reality, and to a nature or biodiversity, both understood as having particular properties and dynamics over which the valuation processes depend.

b) Quantitative analysis of the literature

In order to better understand the structure and dynamics of the academic literature and authors working on the theme of biodiversity offsetting, this section will analyse a corpus of scientific papers, exported from Scopus⁷⁶ and Web of Science⁷⁷, in English, and which have the term “biodiversity offset*” (to include ‘offset’, ‘offsets’ and ‘offsetting’) in their title, keywords or abstract. I’ve decided to narrow the search only to this term, even if it could have been interesting to also include papers about “ecological compensation” or “mitigation banking”, both of which already used in the 1990s while the first reference to biodiversity offsetting in 2005, in order to be able to consider them as a continuity⁷⁸. Nonetheless it would probably have drowned the papers on biodiversity offsetting in a corpus too wide, including hundreds of papers about “ecological compensation” in China (where, interestingly, the concept of biodiversity offsetting didn’t seem to have been very successful⁷⁹). The exported data includes the title, authors and their institutions, keywords, source and the abstract when available, but not the main text of the documents.

For this analysis, I used three softwares, each having their qualities and allowing understanding the corpus through different methods and lenses: Bibliometrix, Gargantext and Prospero⁸⁰ (see their presentation in the methodology section). I tried to understand the type of position that the articles were assuming with regard to biodiversity offsetting, including their framing, their starting point and in particular the presuppositions regarding the world in which they are doing their study, what it seeks to demonstrate or the ‘problem’ that they seek to solve (and also, very importantly, their stated or implied objective: for example is it to make the offsets no longer be used, or to make them less useless, or finally to add their stone on the path that will lead to the grail of no net loss).

The 446 documents from the corpus range from the years 2006 to 2021, are coming from 173 sources and 337 are articles. Figure 15 shows a great increase in the number of publications over time, with a peak in 2018, but also a stabilization since 2015 with roughly 50 publications per year on the topic.

The first part of the description focuses on the main trends. The three journals that have hosted the highest number of publications and are logically the most cited sources are all focused on conservation and are Biological Conservation, Conservation Biology and Conservation Letters. The countries that are largely dominating the scientific production, according to the authors’ affiliations, are Australia, the UK, the USA and France, and the most relevant affiliations that are not universities are by far Forest Trends (the secretariat of the BBOP), the Nature Conservancy and Biotope (a French consulting company founded by Fabien Quétier).

⁷⁶ <https://www.scopus.com/>

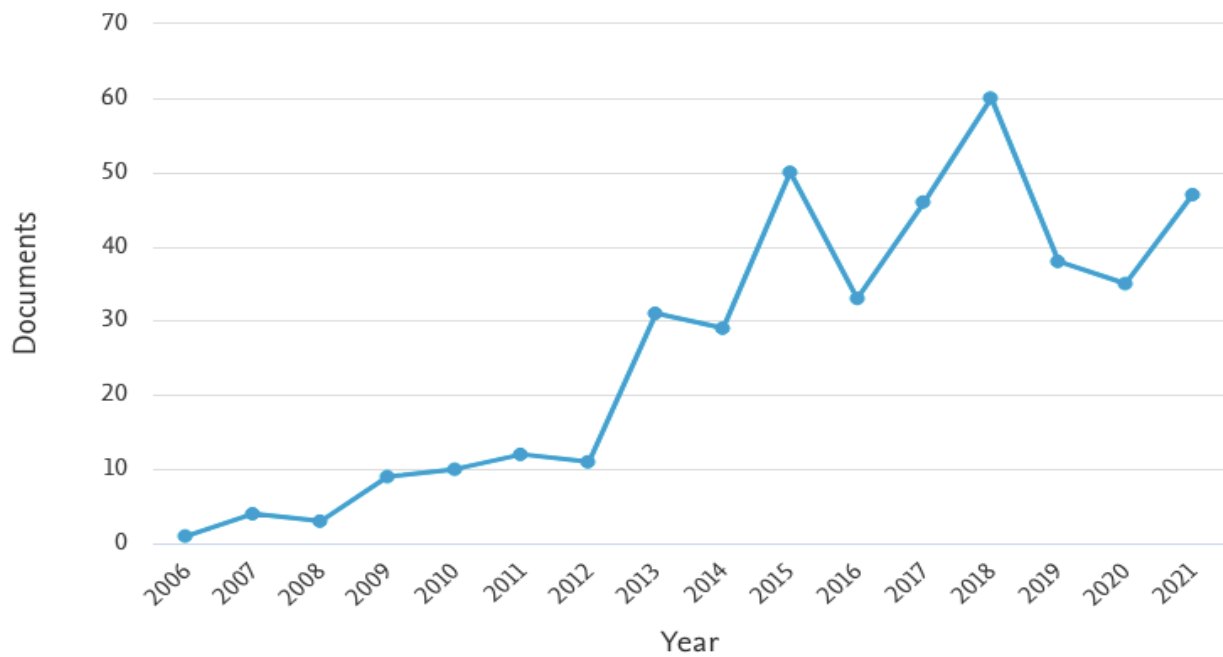
⁷⁷ <http://www.webofknowledge.com/>

⁷⁸ For a wider analysis regarding the choice of keywords but less focused on the divisions of the research community and the dynamics of controversies, see Calvet et al. (2015).

⁷⁹ "While China has a multitude of 'eco-compensation' schemes, the majority of schemes fail under the category of government-mediated payments for ecosystem services. Many of the programs are focused on water quality and flood mitigation services rather than biodiversity". Madsen, Becca; Carroll, Nathaniel; Moore Brands, Kelly; 2010. State of Biodiversity Markets Report: Offset and Compensation Programs Worldwide. Ecosystem Marketplace.

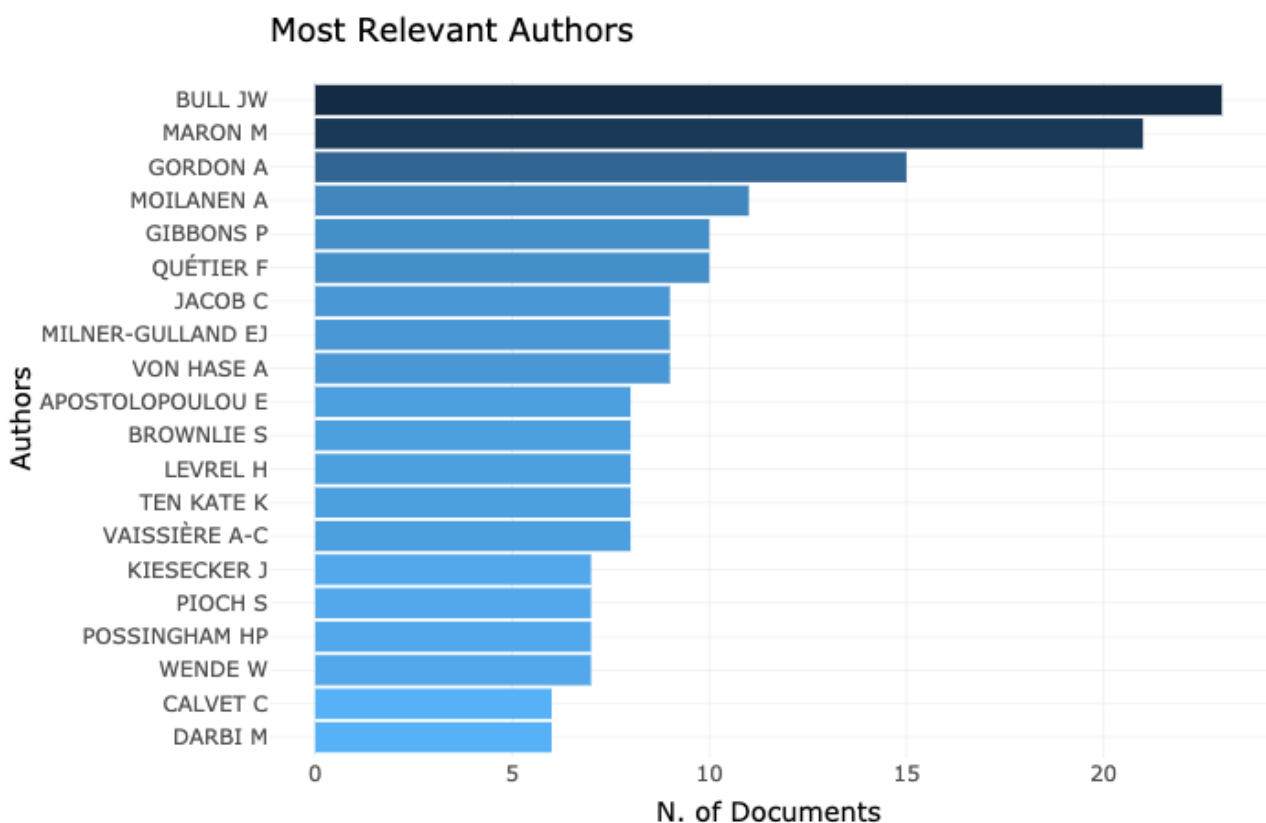
⁸⁰ The analysis with Prospero was limited to the papers exported from Scopus. The integration into Prospero of the exported data was possible thanks to the software Tiresias developed by Josquin Debaz.

Figure 15: Annual scientific production on biodiversity offsetting.



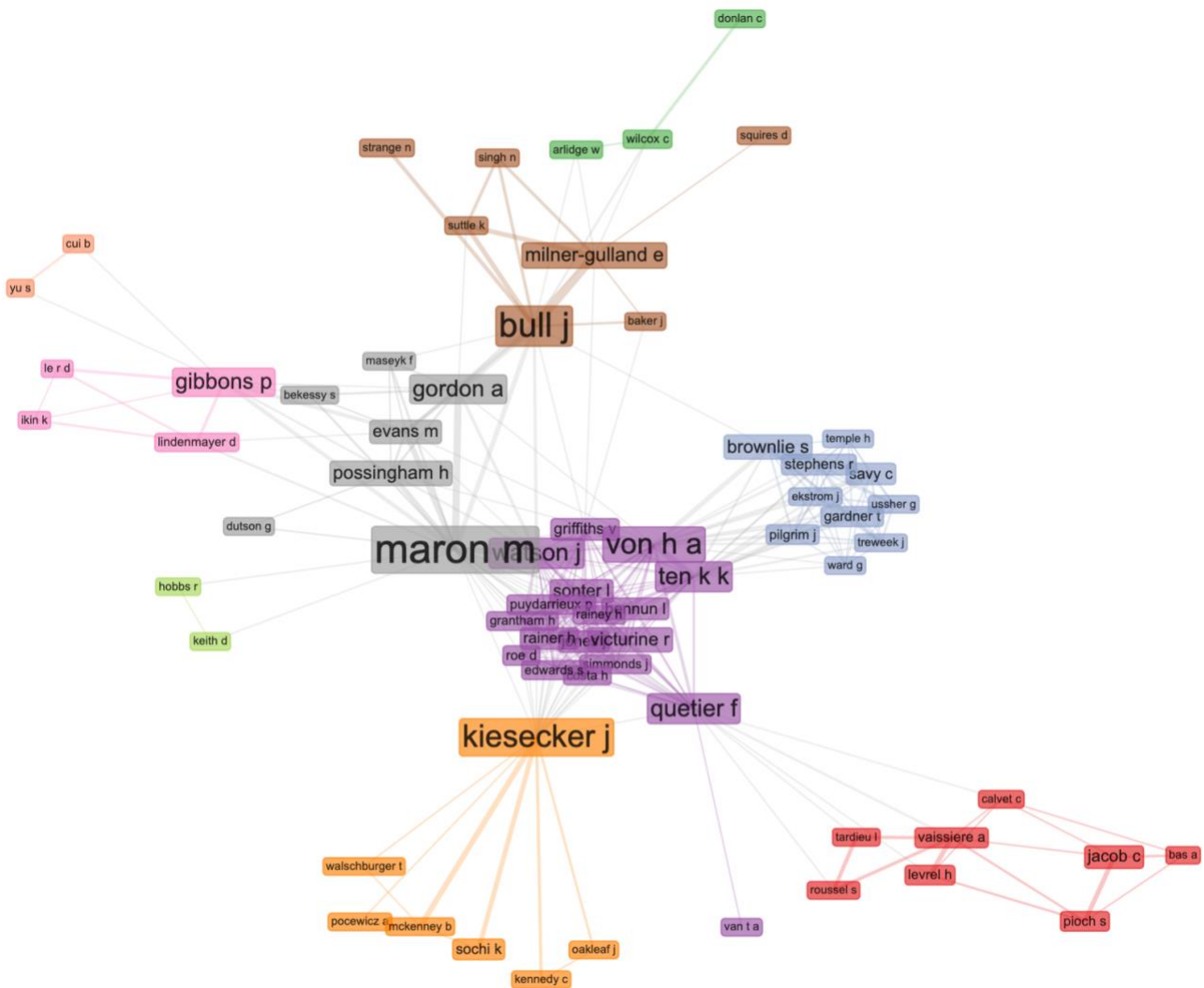
The most relevant (prolific) authors are shown in the Figure 16 and comprise Bull, from Denmark but previously in the UK, Maron, Gordon and Gibbons, from Australia, Quétier, Levrel, Vaissière, Pioch and Calvet, from France, von Hase and ten Kate, from Forest Trends (with various countries' affiliations), Moilanen, from Finland, Kiesecker from the Nature Conservancy (again with various countries' affiliations) and Apostolopoulou from the UK.

Figure 16: Most relevant authors.



We can now look at the collaborations between authors through a graph (Figure 16bis, focusing on the main cluster and removing isolated nodes). It shows interestingly that the majority of the most relevant authors are somehow interconnected. The only ones missing seem to be Moilanen, who seems to have collaborated only with other Finish authors not ‘relevant’ enough to be in the graph, and Apostolopoulou which positions, as we will see, are quite confrontational and who therefore didn’t collaborate with any one present in the central network.

Figure 16bis: Graph of authors’ collaborations (only including the ones pertaining to the central node).



While a group of French authors is present (in red), they seem to be linked to the rest only through the collaborations that some of them have done with Quétier, who himself collaborated directly with most of the other most relevant authors. Kiesecker also is in a similar position, linking the other authors from the Nature Conservancy (in yellow) to the rest of the graph. At the very dense centre, in purple (but which should include Maron as well), are a group of ecologists from the UK and Australia, who collaborated intensively, including with the two from the BBOP/Forest trends (von Hase and Ten Kate) and Quétier. The graph also shows that the two from the BBOP collaborated intensively with the group of people in blue, who are mostly coming from private environmental consulting companies, who in return collaborated mostly between themselves and with the two from the BBOP.

The most frequent keywords that the authors gave to their articles allow to understand quite well the universe of which biodiversity offsets are part of. They are, in order and apart from offsets and compensation, ‘no net loss’, ‘mitigation hierarchy’, ‘conservation’, ‘conservation planning’, ‘environmental impact assessment’, ‘restoration’, ‘conservation policy’, ‘ecosystem services’, ‘mining’ and ‘sustainable development’. A basic frequency analysis of the words present in the abstracts can also be summarized in a word cloud, as shown in Figure 17.

Figure 17: Word cloud of the most frequent words in the abstracts of the documents.

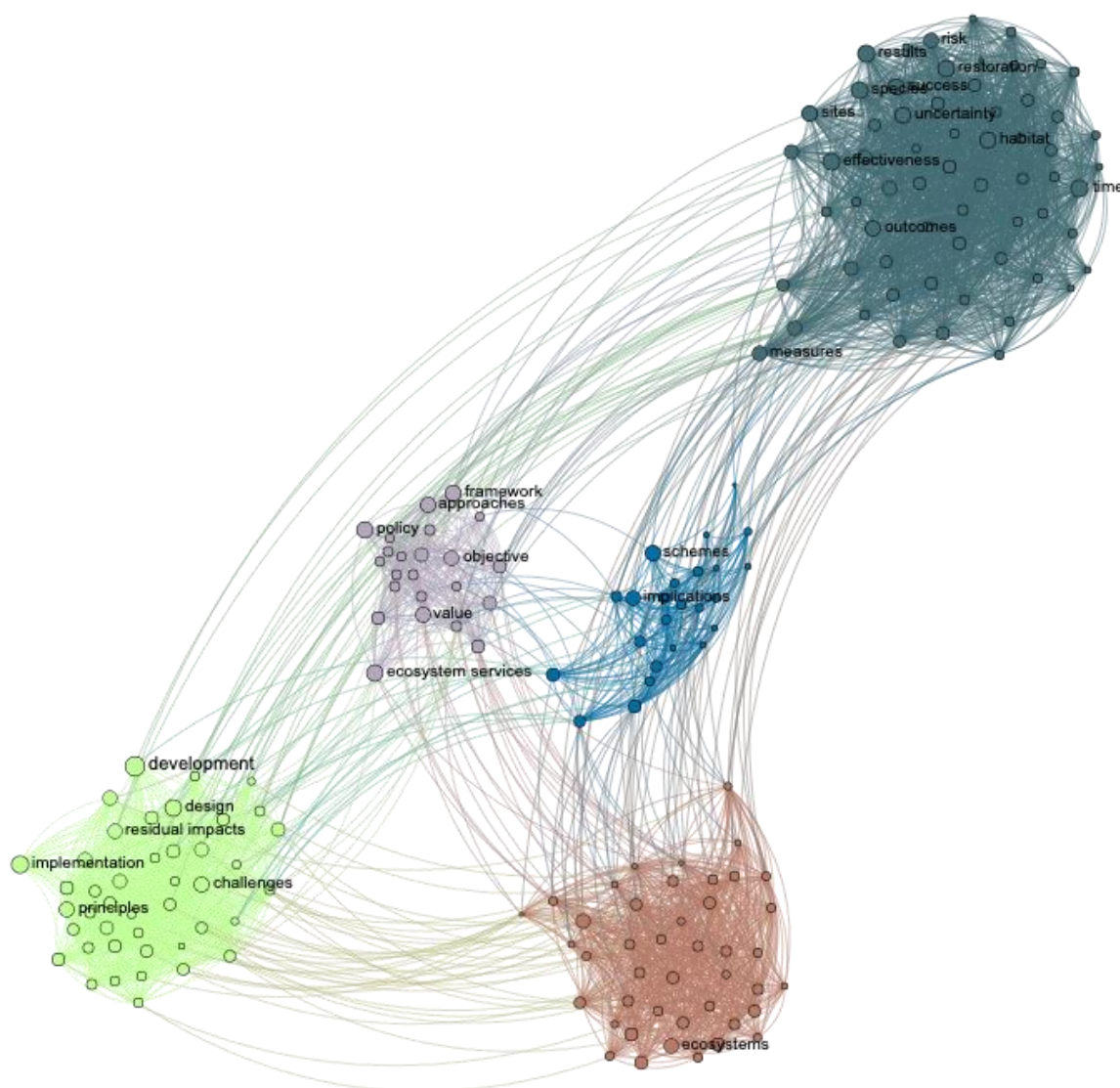


While this allows to see what biodiversity offsets are generally connected to, it doesn't help to understand the different topics of the paper. Putting the corpus into Gargantext allows grouping similar terms and remove those that are too common and/or connected to too many others (in particular the terms ‘biodiversity’, ‘offset’ and variations, and ‘no net loss’, but keeping for example ‘net gain’, since it is used in much fewer publications), as well as those that are not considered relevant. The different names of countries that may appear in the corpus have also been removed from the set of expressions since, even if they might be useful to understand per-country specificities, the goal was more here to have a global overview of more generic topics and of their relations. A conditional or distributional graph can then be computed according to the co-occurrence or probability of co-occurrence of the selected expressions, therefore using a sort of guided text-mining approach.

The graph obtained (Figure 18), clearly shows five clusters of expressions, even if they are all connected together with multiple edges from many expressions. This is partly due to the fact that a number of fairly common expressions associated with offsets, like ‘measures’ (at the bottom left of the top right cluster), remained in the set of expressions selected for their inclusion in the graph. But despite those numerous

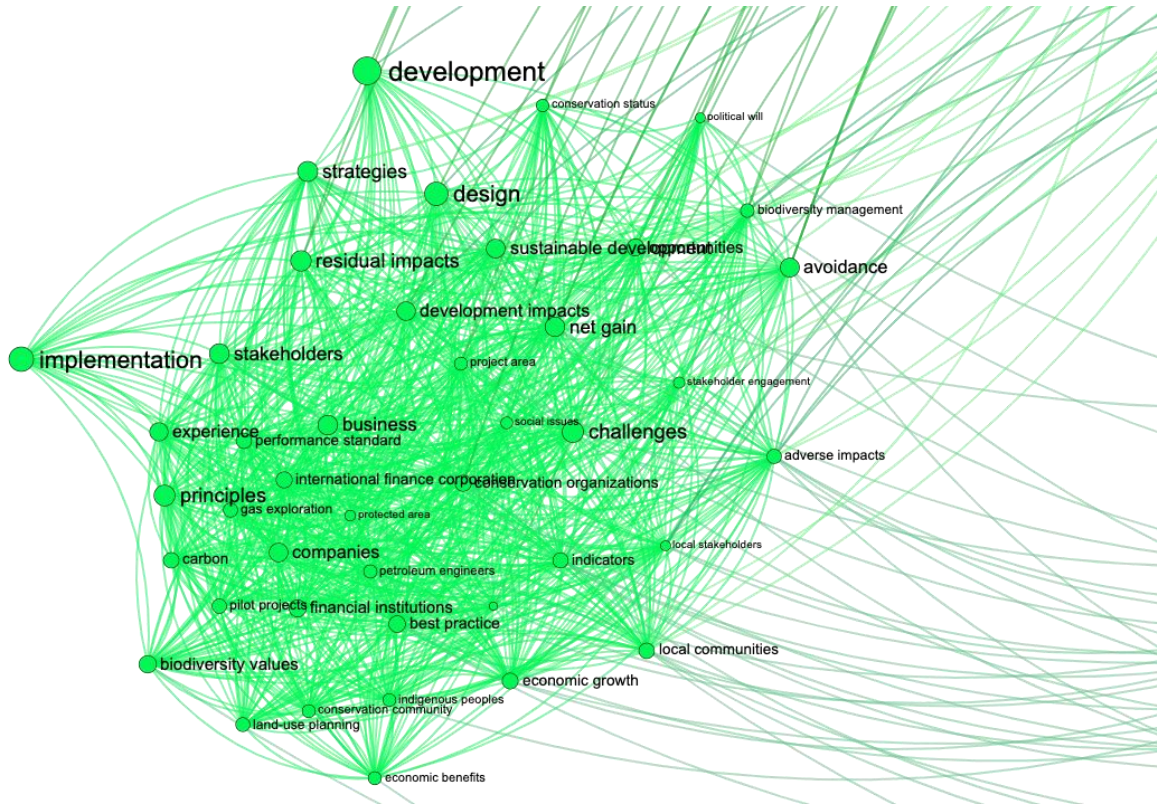
between-cluster connections, when looking at the connection of any given individual node (expression), it appears clearly that they are much stronger within their cluster than with nodes outside of it.

Figure 18: Overview of the graph obtained with Gargantext.



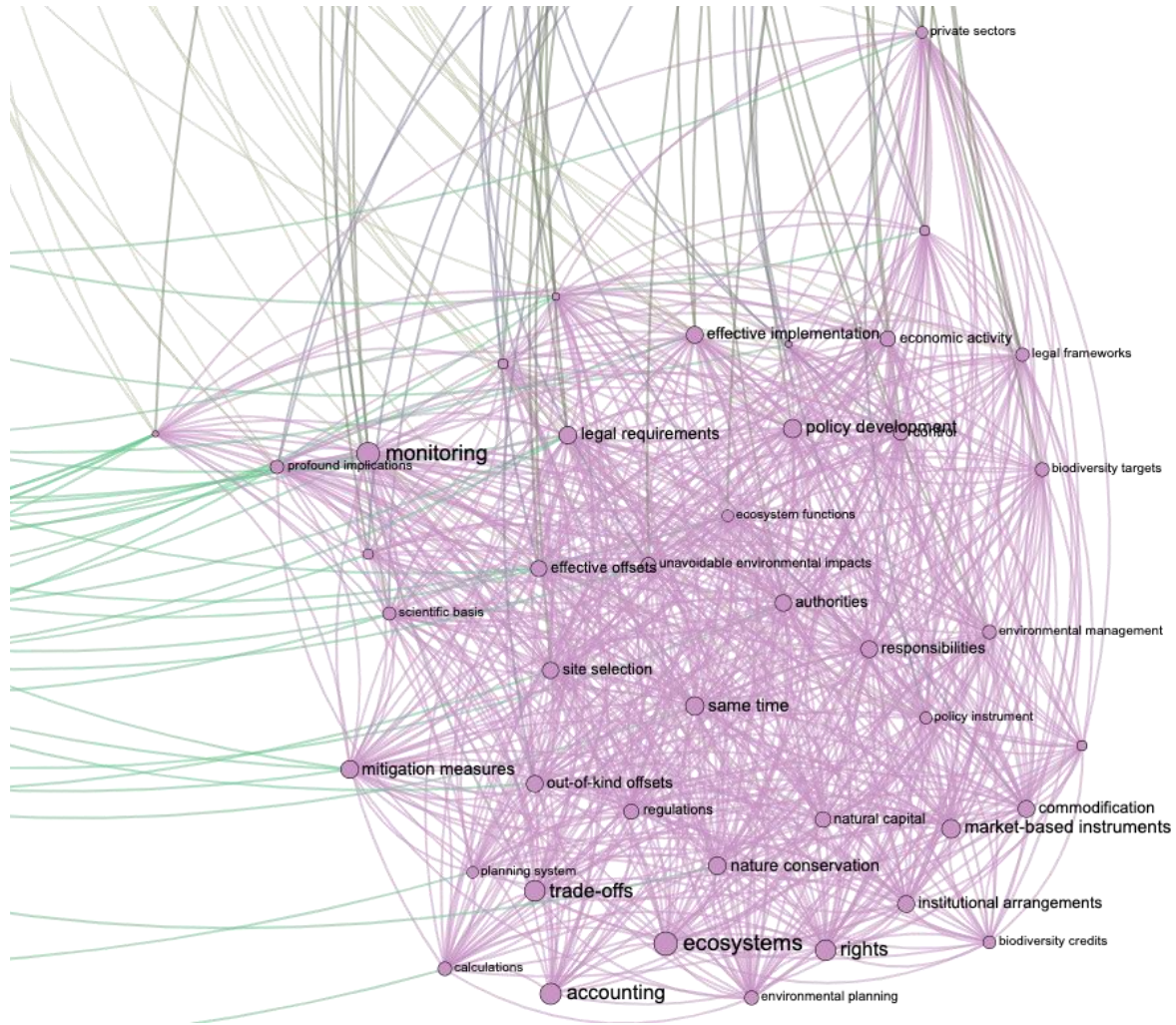
Looking at the different clusters should help understand what the main types of discourses, or approaches, taken in the papers relative to offsetting are. I will analyse in turn the three larger ones at the periphery before looking at the two smaller ones that are more central. The first one, at the bottom-left of the map (figure 19), includes expressions like ‘development’, ‘implementation’, ‘challenges’, ‘sustainable development’, ‘net gain’, ‘business’, ‘principles’, ‘best practices’ and ‘strategies’: it therefore clearly refers to a business-compatible managerial language of the type used by the BBOP but also by those working with the business actors. But, interestingly, it is also the cluster where are found the term ‘stakeholders’ and, although much smaller (therefore less present, but still used along the other terms when they are), the terms ‘local communities’, ‘indigenous peoples’ and ‘social issues’, showing a preoccupation for the people impacted by the ‘development’ projects and their offsets.

Figure 19: First cluster, bottom left.



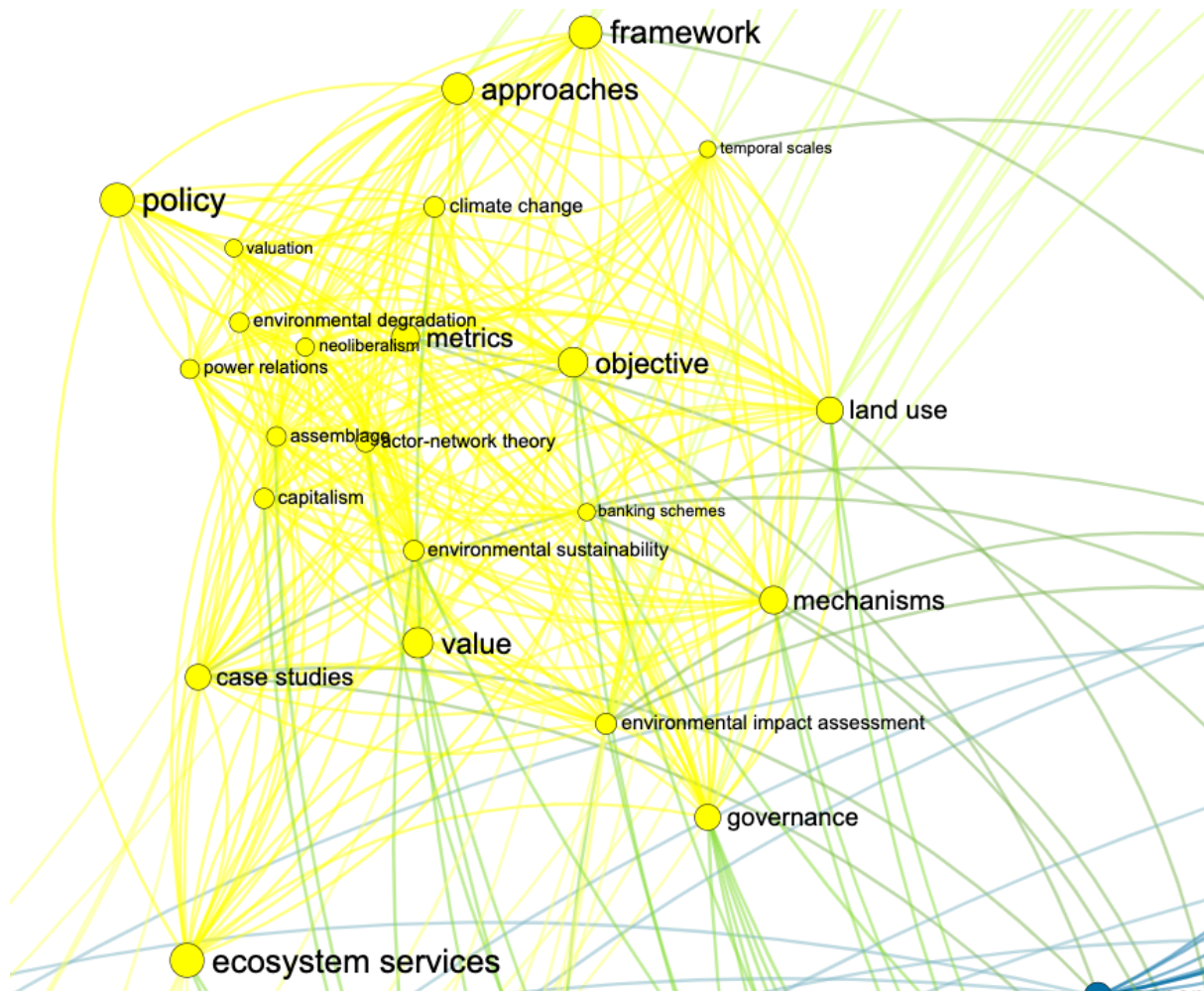
The second cluster (figure 20), at the bottom right, is connected by terms of the first one (that are on its right edge) like ‘indicators’, ‘local communities’ and ‘adverse impacts’, and its terms closer to the first cluster are ‘regulatory requirements’, ‘profound implications’, ‘monitoring’ and ‘mitigation measures’. The main terms of this second cluster are ‘monitoring’, at the bottom are ‘accounting’, ‘trade-offs’ and ‘ecosystems’, and in the top part ‘authorities’, ‘legal requirements’ and ‘policy development’. The cluster is again quite clear, showing the transformation of biodiversity offsets into a policy instrument, with all the bureaucracy that comes with it to plan, set targets, measure, and control. Interestingly, at the middle of the cluster can be found the expression ‘same time’, typical of the discourses of reconciliation of divergent or contradictory courses of action or interests and, in the case of biodiversity offsets, of development and conservation.

Figure 20: Second cluster, bottom right.



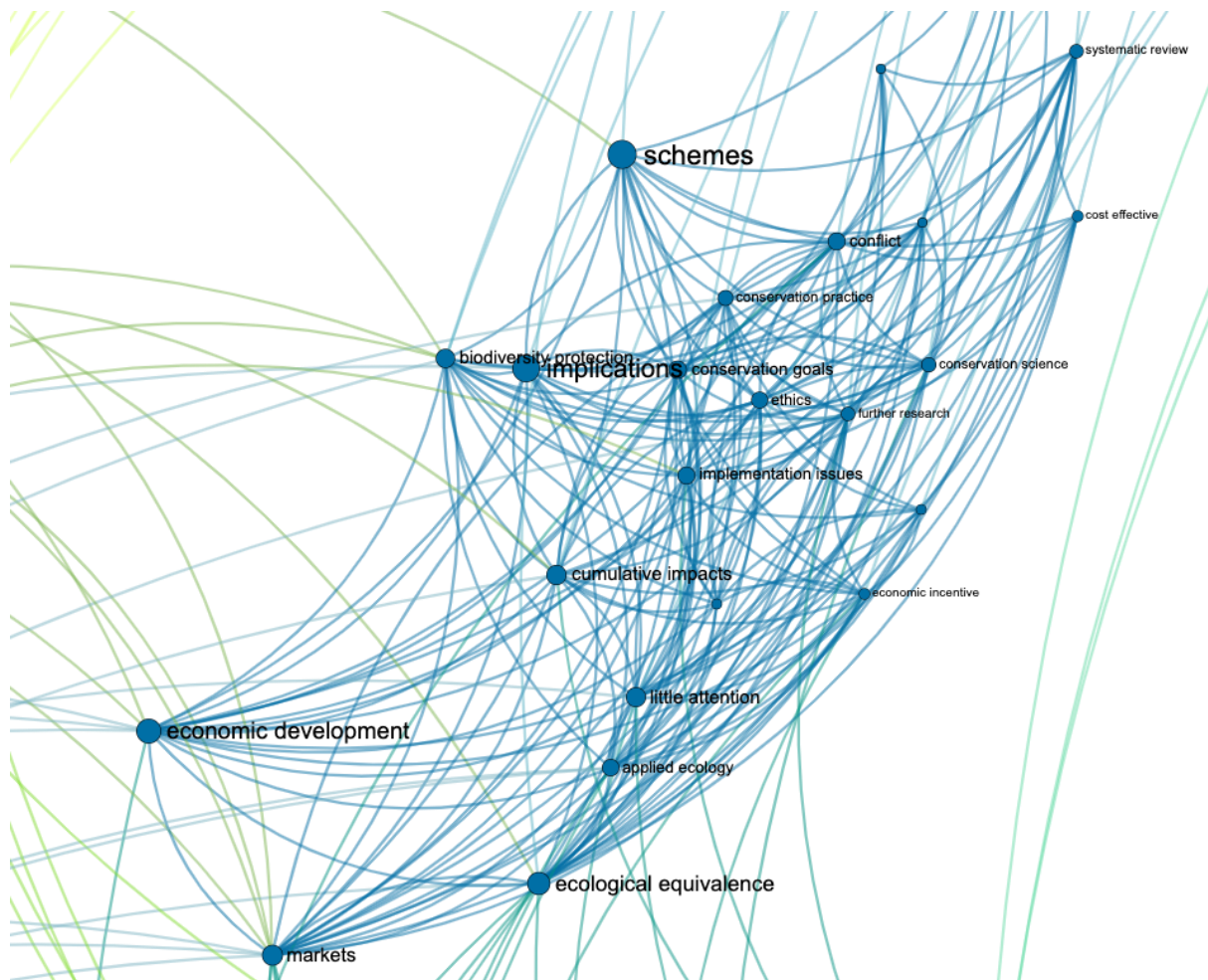
As we leave the second cluster by its expressions at its top, like ‘effective implementation’, ‘improving’ and ‘private sectors’, we reach the third cluster, at the top of the graph (figure 21), which is itself connected to the second cluster by expressions like ‘empirical evidence’, ‘assumptions’, ‘targets’ and ‘urgent need’. Here, the dominant expressions are ‘effectiveness’, ‘species’, ‘outcomes’, ‘restoration’, ‘time’, ‘habitat’, ‘native vegetation’ and ‘vegetation condition’ but also ‘counterfactual scenarios’, ‘method’, and ‘concerns’. The terms are clearly related to conservation science, true to its characteristics described in the first chapter, that is a speciality linked to ecological science but also very much applied and linked to concerns and directed toward results. In this case this practice carries the burden of making work and evaluating the biodiversity offsets, and demonstrating its ‘outcomes’ in terms of ‘success’ or ‘failure’.

Figure 22: Fourth cluster, middle left.



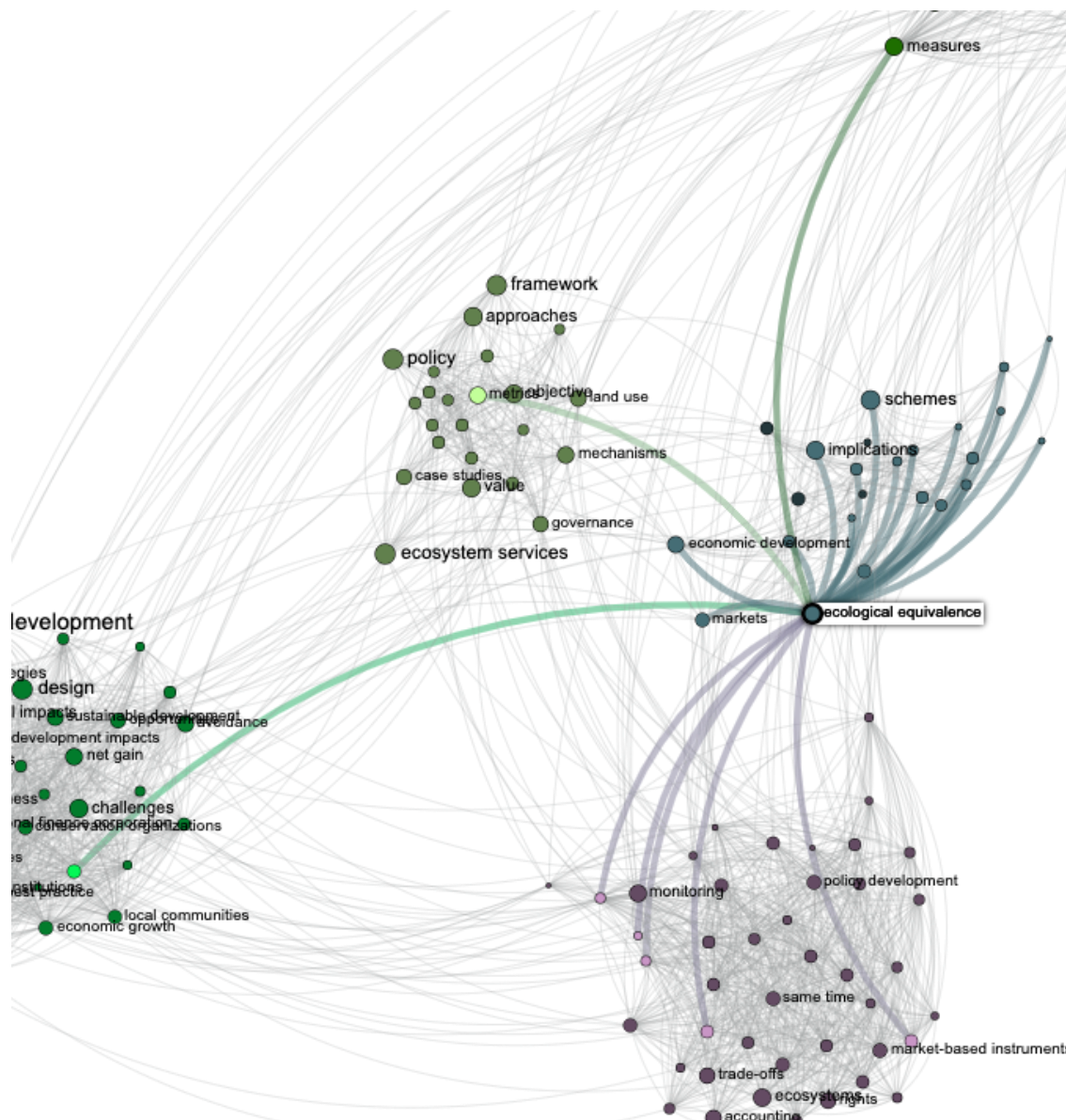
Finally, while the fourth cluster corresponds to an analytical link between the three larger ones, the fifth cluster (figure 23), at middle right, seem to relate to the bigger picture, with its dynamics, consequences and difficulties. The main expressions are 'schemes', 'implications' and 'economic development', but the cluster also includes 'ethics', 'conflict', 'contestation', 'difficulty' and 'depoliticization', which could be understood as relating to the 'little attention' toward 'implementation issues' and 'cumulative impacts'.

Figure 23: Fifth cluster, middle right.



Linking the two central clusters, as well as all the other ones, are ‘mechanisms’, ‘governance’, ‘biodiversity protection’ and ‘economic development’, showing well the paradigm within which biodiversity offsets are included. The term most connected with the four clusters of the bottom part (and most central to all of them) is ‘markets’, which therefore be considered as a key articulation between them (actual or tentative). Interestingly, ‘ecological equivalence’ (Figure 24) is not in the third cluster (at the top, and to which it is only linked through ‘measures’), but at the bottom of fifth cluster and is linked to ‘metrics’ of the fourth cluster, ‘indicators’ of the first cluster, but also to five expressions of the second cluster (including ‘commodification’ and ‘scientific basis’) letting wondering if it is actually more related to politics than its link to ‘depoliticization’ could let think, or if to the contrary it is due to critical papers actively trying to relink it to political questions. Not that surprisingly, it can finally be noted that the expression ‘measures’ is in the cluster related to conservation science, ‘indicators’ is in the one linked to business, and ‘accounting’ is in the more managerial one, while ‘metrics’ is in the articulating cluster 4.

Figure 24: Links of the expression ‘ecological equivalence’.



c) Academic interlocutions

A few number of interlocutions between leading authors of the field happened through papers and responses published in the same journals and, since they are quite symptomatic of the nature of the debates and controversies, I propose to analyse the three different sequences presented in the Table 6 in the following section. Another good reason to take the time to understand the dialogue that is established during those papers and responses is not only that it allows to see more clearly the points on contention and the point of view of different actors, but also that the responses, and even more the responses to the responses, become more incisive, possibly because of the need to answer a public questioning of their academic probity, render explicit some views that were only implicit in the first paper, transforming the analytical scales and frames.

Table 6: three academic interlocutions on biodiversity offsetting between 2012 and 2016. (In red, the authors who can be found in multiple interlocutions)

Authors	Title	date accepted/ published	Source title
INTERLOCUTION 1			
Pilgrim J.D., Brownlie S., Ekstrom J.M.M., Gardner T.A., von Hase A., Ten Kate K., Savy C.E., Stephens R.T.T., Temple H.J., Treweek J., Ussher G.T., Ward G.	A process for assessing the offsetability of biodiversity impacts	24 November 2012	Conservation Letters
Regnery B., Kerbirou C., Julliard R., Vandevelde J.-C., Le Viol I., Burylo M., Couvet D.	Sustain common species and ecosystem functions through biodiversity offsets: Response to Pilgrim et al.	23 March 2013	Conservation Letters
Pilgrim J.D., Brownlie S., Ekstrom J.M.M., Gardner T.A., von Hase A., Ten Kate K., Savy C.E., Theo Stephens R.T., Temple H.J., Treweek J., Ussher G.T.	Offsetability is highest for common and widespread biodiversity: Response to Regnery et al.	1 September 2013	Conservation Letters
INTERLOCUTION 2			
Curran M., Hellweg S., Beck J.	Is there any empirical support for biodiversity offset policy?	4 September 2013	Ecological Applications
Quétier F., Van Teeffelen A.J.A., Pilgrim J.D., von Hase A., Ten Kate K.	Biodiversity offsets are one solution to widespread poorly compensated biodiversity loss: A response to Curran et al.	1 September 2015	Ecological Applications
Curran M., Hellweg S., Beck J.	The jury is still out on biodiversity offsets: Reply to Quétier et al.	1 September 2015	Ecological Applications
INTERLOCUTION 3			
Apostolopoulou E., Adams W.M.	Biodiversity offsetting and conservation: Reframing nature to save it	6 October 2015	ORYX
Dempsey J., Collard R.-C.	If biodiversity offsets are a dead end for conservation, what is the live wire? A response to Apostolopoulou & Adams	18 October 2016	ORYX
von Hase A., Ten Kate K.	Correct framing of biodiversity offsets and conservation: A response to Apostolopoulou & Adams	9 November 2016	ORYX
Apostolopoulou E., Adams W.M.	Biodiversity offsetting and the reframing of conservation: A reply to ten Kate & von Hase and Dempsey & Collard	21 November 2016	ORYX

While the list of the explicit interlocutions (in the sense that they are formed by a paper followed by articles with titles explicitly mention that they are a response to another one) may not be exhaustive, they are the only one that I found, and it is interesting to note that von Hase A. and Ten Kate K., both working at the time for the BBOP, took part in the three of them, showing their widespread implication in responding to arguments raised by academics.

In the first interlocution, the original paper (Pilgrim, Brownlie, Ekstrom, Gardner, Hase, K. T. Kate, et al. 2013a) was written by a large group of people that included researchers from the Biodiversity Consultancy, the BBOP and Conservation International, as well as from consulting companies and two conservation academics, all from commonwealth countries or the USA. Their idea was to describe ways which may allow differentiating cases according to their ‘offsetability’, with both the goal to “improve the consistency and

defensibility of development decisions involving offsets” and the “hope that the proposed process will stimulate much-needed scientific and policy debate to improve the integrity and accountability” of offsets. Through putting a clearer line between what can be offset and what shouldn't, in their opinion, the aim is clearly to render offsets less susceptible to the critics. While they acknowledge that “offsets are controversial and have many inherent difficulties, too numerous and complex to address here”, they aim at tackling the issues one by one, this time focusing on the ‘offsetability’. In practice, they want to establish the necessary ‘burden of proof’ for the developers of projects depending on the relation between the ‘biodiversity conservation concerns’ and the ‘likelihood of offsets’ success’. They claim that their “criteria are sufficiently general that they should be applicable to any country or region if adjusted to incorporate local societal values”, even if “further improvements are necessary following practical testing”, but the problem will be on their qualification of what counts as ‘biodiversity conservation concerns’.

The group of seven people, who responded to them (Regnery et al. 2013) are all ecologists specialized in conservation from the Museum National d'Histoire Naturelle in France. At the time the first French biodiversity offsetting law had just been passed, but their argument doesn't refer to local particularities and start from global trends. Indeed, they say to be surprised by the deceptive lack of integration in the said ‘concerns’ of the IUCN red-list index's Least Concern/Near Threatened species which, they say, can be considered as common species but still have a conservation status that is rapidly deteriorating and are crucial for ecosystem functions. They advance that it is therefore “necessary to move from a species-by-species approach to more integrative approaches” which take into account properties that “may be critical for ecosystem sustainability” as well as their connectivity.

In their short response, the authors of the original paper that followed (Pilgrim, Brownlie, Ekstrom, Gardner, Hase, K. ten Kate, et al. 2013b) “wholeheartedly agree that conserving common biodiversity is crucial for ecosystem functioning”, but consider that Regnery et al. both misinterpreted the purpose of their process and applied it in flawed ways. They remind that they had suggested taking into account not only species but also ecosystems, or possibly ecological processes “when data permit”, and also reproach to the French authors to “replace global with national threat categories, despite our advice”. Finally, they say that what is considered to be of low ‘concern’ might not be subjected to offsets in the absence of issues of cumulative impacts, and state that “offsetting 100% of impacts to achieve No Net Loss across landscapes would be ideal, but transaction costs would render such a system impractical. Offsetting all small-scale impacts on biodiversity of least conservation concern would only be practicable if a simple compensation system — such as a system of developer contributions or ‘in-lieu’ fees — were established, though this would likely not reach the high bar of No Net Loss offsetting”.

This first interlocution shows very well the profound entanglement of ecological valuation processes, policy development objectives and their relation to ‘practicality’. Behind this is also an emerging tension between the varying scalability of different concepts, frameworks and data: the framework is said to be generic and to be adapted locally, while global biodiversity data and categories cannot simply be applied to a national context. But other types of scales try to be difficultly integrated, including ecological ones when are rapidly mentioned the issues of cumulativity (of impacts) and connectivity (of ecosystems), but also of the project, the transaction costs and the expectations.

The second interlocution start by a paper from three environmental scientists from Switzerland trying to answer whether there is “any empirical support for biodiversity offset policy” (Curran, Hellweg, and Beck 2014) with a highly technical ecological approach. Their question was focused on the problematic use of restoration as a compensation method because, they argue, it “implies long time delays and a low certainty of success”, especially if considered a goal to have an habitat that converges toward values similar to an old-growth one, therefore making that offset ratios should be set much higher than what they have found them to currently be. A response (Quétier et al. 2015) to this paper was elaborated by the two people from the BBOP and the one from the Biodiversity Consultancy who were part of the authors of the paper on offsetability above, along with a prolific French author working for a consulting company and an ecologist from the University of Amsterdam. They state that they totally agree both with the importance of setting limits to what can be offset and that, moreover, it is part of the ‘good practice’ promoted by the BBOP, and with the limitations of ecological restoration, but they “do not agree, however, that this implies all biodiversity offsets lack empirical support or that they should be discarded altogether”.

Their first argument is that they repeatedly said that “old-growth” biodiversity should obviously not be impacted and considered for offsets, nor that it should be considered a goal of the offsets, which only aim at providing “a net balance of residual losses and gains” according to an “appropriate baseline”. But, as we will see, the issue will be both the definition of what “old-growth” means as well as how to set the baseline.

Their second argument is that it cannot be said that a better application of the mitigation hierarchy accompanied with offsets that follow BBOP standards is not an improvement. The argument about the mitigation hierarchy is interesting (see Chapter 8 for its relation with issues of scales and its framing), because it resonates with debates which already try to replace the compensations within a larger frame, a sequence within which they are the last piece, and which allow to see them from another perspective, reason why it is often used in the arguments against them. While even the BBOP constantly repeats this end-of-the-chain, only-if-the-other-measures-have-been-exhausted situation of the offsets, their activity is only focused on them, and they therefore find themselves in a situation of having to respond as well to the consequences of the lack of implementation of previous steps while not really wishing to handle them. Indeed, they say again in the paper that the mitigation hierarchy is key but, since “projects often go ahead in spite of significant residual impacts on biodiversity if they are considered priorities from an economic, social, or political point of view”, it is best to at least evaluate them against high standards like the no net loss.

The third point of contention is the status of the compensations through conservation activities that would avoid biodiversity loss, called ‘averted loss offsets’ and which relate to the debate on additionally, as will be described in the next section. They say that since “offset gains rely on a background rate of biodiversity loss that is determined, cumulatively, by development projects and other pressures on biodiversity”, they “agree that averted loss offsets alone would rarely (if ever) achieve no net loss at the landscape scale”, but not if considering the “project level”. Here again, issues of scales and scales framing proved to be central, whether geographical, temporal, and the interplay between the two, but also in terms of commensurability. “Averted loss” strategies need a background rate of loss that is higher than zero and, they say, are therefore not appropriate otherwise. But they argue that “the reality, however, is that biodiversity is being lost”, providing a “context” in which it may be better to preserve what exists than attempting to do restoration with the difficulties that it involves. Therefore the argument of “reality” helps to build the argument justifying an “averted loss” strategy to reach ‘no net loss’. While there is no doubt that the authors do not hope for

biodiversity loss to continue (genre lay speaking), in this argument, it is also clear that offsets both seem to be “part of the solution”, as they say, while also depending on the “reality” to remain in as they describe it so to allow the demonstration of ‘gains’ that would compensate for the losses.

The answer provided by Curran et al. (2015) aimed logically at answering the different objections raised but, without entering in the details of the argumentation, a few points can be put forward. First, while Quetier et al. refer to a “reality” of biodiversity loss and to offsetting best practices, Curran et al. symmetrically respond by putting forward the reality of biodiversity offsets (that is the “performance of offset policy in the real world”) and in particular of how they “translate to implementation *on the ground*” (their emphasis; the relation between this expression and its application to biodiversity-related issues seem only coincidental in this case, but it is still quite telling on where reality lies in this argument). In particular, they question the assessments of impacts, in particular relative to their duration, and its consequences for the establishment of the baseline necessary to assess the ‘averted losses’ and on the application of the mitigation hierarchy (which is often used by companies to demonstrate ‘what would have been’ the impact if they didn’t avoid and reduce them, and that the actual impacts are very low in comparison to worse).

Then, attacking directly the idea that offsets should be considered as a “solution” regardless of its current implementation issues, they consider not only that policy and implementation are inseparable but, most importantly, that “the introduction of new policy should be based on the consideration of alternatives”. Indeed, while there are disputes over the construction of counterfactual scenarios to demonstrate the no net loss, in particular when compared to the absence of offsets, they critique, on the other hand, the absence, or deficiency, of such scenarios to compare offsets with other types of policies or courses of actions. These remarks therefore reframe not only the ways offsetting should be evaluated as a policy in itself, but also its evaluation as a generic policy aiming at “balancing conservation and development”, the first element being often referred to as ‘still in progress and not yet possible to evaluate’ (indeed, “detailed post-implementation tests of no net loss for individual projects are still near absent”) and the second only articulated with the other steps of the mitigation hierarchy at the project level. The framing/reframing understanding of the issue is evident when they further argue that “the simple choice between “business as usual” or biodiversity offsets thus presents a false dichotomy”. They conclude by stating, like often in papers on offsetting, that more studies are needed and that “we believe a clear point of agreement is that the jury is still out regarding the desirability and effectiveness of biodiversity offset policy”, even if it clearly seems that they do not forecast the same conclusions as the other authors.

After a first interlocution more focused on biodiversity valuation differences from the point of view of ecologists, and the second on the assessment of offsets’ results and policy through ecological economics, the third interlocution is more directly focused on the relation between ontology, neoliberalism and politics. The initial paper, “Biodiversity offsetting and conservation: reframing nature to save it” (Evangelia Apostolopoulou and Adams 2015), was written by Evangelia Apostolopoulou and William M. Adams, two academics that could be associated with the somewhat influential English marxist geography school. Contesting the depoliticizing focus on technical issues in the biodiversity offsetting literature, they consider that it has “more profound implications”, which is why they consider “not surprising that proponents of biodiversity offsetting [including ten Kate and the BBOP] frame it as a groundbreaking strategy”. While they say that “the frame of offsetting” reframes nature not only as isolated and simply measurable but also as

exchangeable and therefore not local specific, it also refrains conservation as the exchange of credits and renders it dependent from dominant views of development. This way, it “is prevented from addressing key issues concerning the socioeconomic and political context that determines society’s destructive relationship with non-human nature”. After having insisted that the issue is political, they logically conclude by a call for action that reminds the style of political pamphlets: “It is vital for conservation to challenge the ideological potency of this rhetorical framing and allow direct political engagement”.

This publication received two distinct responses, published at a short interval a year later, and respectively from Dempsey & Collard, two Canadian geographers (Dempsey and Collard 2016), and ten Kate & von Hase, the two BBOP researchers (Hase and K. ten Kate 2016). The first ones, who are not shy on considering ecofeminist views on the broadness of capitalist accumulation dependence on exploitation, regret the conversion of the conservation community to biodiversity offsetting. They underline Apostolopoulou & Adams’ point that what is repeated so much by advocates of offsetting, that it is a solution to resolve the tension between development and conservation, is precisely the problem, since it “folds conservation too far into economic development”. They then try to build on this to find the “other conservation politics obfuscated by offsets”, including by understanding inherent capitalist contradictions and asymmetries, and where could ecological movements go from there.

The other response is obviously on another tone. First objecting to the idea that debates on offsetting are depoliticizing, they affirm that from their experience “the political, economic, social and financial implications weigh just as heavily in decision makers’ minds as the technical ones”. Wishing to reestablish the “correct framing of biodiversity offsets and conservation”, they consider that the correct approach is to see them as the last step of the mitigation hierarchy (as already discussed above), and that if the “results so far have, more often than not, been disappointing”, it is due to an inadequate offset policy development by national governments which do not follow their “high standards” both in their conception and their implementation, and what is lacking and needed is “time, capacity and political will”. Although they do not cite the paper of Curran et al. (Curran et al. 2015) discussed above and who was opposing them, they reuse the expression stating that “the jury is out”, but in this case to see if high standards can be reached by governments and companies. They also oppose the critiques on the simplifying framing of nature, since they argue that the metrics they select are “good biodiversity surrogates and proxies”, and involve “best practices” that are better than at the beginning even if it is still “an acknowledged and well-known challenge”. They also contest the impact of offsets on general conservation since it only applies for residual impacts previously ignored, unquantified and with no value assigned. Going back on the nature of reality, they advance that “the only logical alternative of no impacts may be desirable but is unrealistic in a world of 7,4 billion people who consume food, water and medicines, use construction materials and power, and travel”, and that the real risk of dismissing offsets is to come back to business as usual.

Finally, the response (Evangelia Apostolopoulou and Adams 2016) to the responses answers the points of the second one while building on the first one. Interestingly, the question is here again of the ‘context’ and of the ‘reality’. While for Ten Kate & von Hase, the context is the mitigation hierarchy and the reality one of economic growth and in which offsets should be better implemented, for Apostolopoulou & Adams, “they write as if the idealized *Second Life* world of market-based conservation were real”, functioning as the theory predicts as well as being fully efficient, but “the real world is not like that, as they themselves point out”. Opposing the focus on the so-called high standards, which are part of the “ideological belief in offsetting”,

they point out that, for them, “the technical challenges of offsetting are a distraction” from the importance of analysing the “wider political economic context within which they are operated” and that it reflects and reinforces, including by undermining other types of conservation. Finally, they consider that “there is a need to open up the possibility of completely rejecting policies that are harmful for both humans and non-human nature and to challenge current patterns of economic development and growth openly”. For them, the change will not happen through better standards but, agreeing with Dempsey & Collard, through environmental and social movements.

3.5.2 Never-ending challenges and promises of futures to come

Since the first attempt to develop biodiversity offsets and with their progressive extension to numerous countries following the activism of “policy entrepreneurs” (Hrabanski 2015) like the BBOP, it can be observed a continuous work from professional and academic actors (at the international level but in Colombia as well, as will be shown in the following chapters) to not only ‘improve’ them and establish stronger scientific basis, but also to look into the emerging issues and the challenges ahead, to debunk the ‘misinterpretations’, to find ways to avoid the ‘mistakes’ and better the framing or provide adjustments to respond to the critics or counter the arguments they put forward.

From the beginning, the 2004 publication was stating that “while the benefits of biodiversity offsets are potentially large, several significant hurdles need to be overcome to realize them” (IUCN 2004). But when looking at the literature, and up to more than 15 years later, it can easily be given the impression of never-ending rounds of “challenges ahead” and the always renewed hope that, when overcome, ‘the potential’ of biodiversity offsetting will finally be allowed to be achieved. This is also why the publication insists on the importance “to secure consent and build trust among key stakeholders for the approach” who may have to wait a substantial time before being able to evaluate its results. Thus, the field of biodiversity offsetting substantially relies on an economy of promises, similar to what Foyer et al. (2017) described about REDD mechanisms, and which is classically based on an epistemological logic of a technoscientific progress to come (Chateauraynaud and Debaz 2017:85), even if it is articulated with a number of other ones. Beside the ‘instrument’ in itself, a large discrepancy has been noted between the short temporality within which the biodiversity ‘losses’ can be observed in all their tangible magnitude, while the gains remain evasive and directed toward the future (see for example Weissgerber et al. 2019). Wondering if offsets are “Faustian bargains”, Maron et al. (2012) considered that they “place substantial faith in the ability of restoration to recover lost biodiversity”. For Dempsey & Collard (2016), because they actually don’t have any proofs that it will work, “the gamble that offset proponents are making is that universalizing offsets in national systems and corporate practices throughout the world will help soothe these fundamental tensions, bringing green development via mainstreaming biodiversity conservation”.

3.5.3 Other actors contesting offsets

The division that appears clearly in the English international literature is also quite strong in Colombia, as shown by the literature in Spanish about biodiversity offsets in Colombia as well as by my fieldwork, as

will show the next chapter. But the divisions and arguments between those debating the appropriateness of further developing this “instrument” emerged as well through the movements of opposition which built up around specific large infrastructure projects. In France, one of the largest and most organized opposition structured itself during the decades-long confrontations about the Notre-Dame-des-Landes airport project (launched in 1963 and scrapped in 2018), and the work to challenge the proposed biodiversity compensations became crucial and gave to compensations a much wider echo than it had, even if it wasn’t the first project for which opponents relied on arguments relative to the protection of biodiversity or endangered species. But, quite uniquely, in this case activist botanists formed in 2013⁸¹ a group specifically aimed toward confronting the offsetting strategy and called “the struggling decompensators” (*les décompenseurs en lutte*). Their major arguments were that compensations are based on the misplaced faith in technological capacities for restoration and on arbitrary technocratic divisions between species and between ecosystem functions through which are established the ratios. Finally, they put forward the issue of the immediate and certainty of losses “while compensation by ecological restoration projects (like the “nature assets” type which are a form of speculation) can only compensate in a way that is deferred in time and uncertainly”, something argued and confirmed by French researchers a few years later (Weissgerber et al. 2019). On top of nourishing academics, this type of work has also been used by groups of activists opposing other projects in France, like the construction of new high-velocity train tracks in the south-west (Vandevelde 2013).

Later in the same year 2013 which saw the formation of the “décompenseurs en lutte”, a joint statement titled “No to Biodiversity Offsetting!” was signed by more than 140 organizations during a counter event of the World Forum on Natural Capital and organized by the NGOs FERN, Re-Common, Counter-Balance, among others⁸². Bluntly put, it stated that “biodiversity offsetting is the promise to replace nature destroyed and lost in one place with nature somewhere else”. It was also claiming that offsets are mostly beneficial to the companies and governments, while it won’t prevent and could even increase biodiversity loss, and that it will harm communities, in particular since the values that Nature has for them “cannot be measured, priced nor offset any more than communities can simply move and live elsewhere”.

In 2017, Re-Common and Counter-Balance issued brochures with an even stronger message, including one with a particularly evocative title: “Biodiversity Offsetting: a threat for life. How a new dirty trick is facilitating the destruction of nature and the eviction of communities from their land” (ReCommon 2017). The same year, illustrating the intensification of the actions against offsetting, a bulletin of the World Rainforest Movement was titled “Biodiversity compensation: expansion of industrial extraction and land grabs” (World Rainforest Movement 2017), with an editorial that read: “Destroy here and destroy there: The double exploitation of biodiversity offsets”. As it can be observed, critique of offsetting outside academia does not happen on the same terms, and the debate on technicality and depoliticization definitely do not take the same precautions as in the scientific papers.

⁸¹ <https://naturalistesenlutte.wordpress.com/2013/02/14/decompenseurs-en-lutte/>

⁸² For an analysis of the signatories see Hrabanski, 2015, p7.

3.6 Biodiversity offsets are dead, long live biodiversity offsets?

According to Quétier et al. (2015), in the years 2013–2014, almost a decade after the initial spread of biodiversity offsets, emerged a debate on the policies themselves as well as on their implementation, both largely controversial as shown in the interlocutions. On top of the uncertainties of restoration and of their possible failures (Maron et al. 2012), another identified issue is the implementation of the compensation projects, with a gap between the plans that have designed as a legal requirement and their effective execution. For Quétier, Regnery and Levrel (2014), deficient institutional arrangements and science base can be the cause of the inefficiency of the offsets projects, with a “likely outcome [being] an expansion of ‘paper offsets’”.

In 2015 Maron et al. (2015a) made a call in *Nature* to “Stop misuse of biodiversity offsets” in particular with regard to governments who may try to include compensation areas in their conservation targets like the Aichi targets, or to fund regular conservation through offsets (Evangelia Apostolopoulou and Adams 2016). Following this, in 2016, Maron et al. (a distinct group of researchers than the previous paper, but still mostly from Australia) published a paper (Maron et al. 2016) that aimed at ‘taming’ what had become a ‘wicked problem’, and in which biodiversity offsets were now defined as a “contentious conservation tool”, since views on it varies “from outright rejection to qualified acceptance, with scepticism and resistance also prominent in civil society discourse” (they make a reference to a 2014 report by Friends of the Earth Europe on the commodification of nature, but not to the 2013 pamphlet). Here the ‘reality’ is that “there are many risks associated with the unscrutinized expansion of offset policy”, but that “governments are increasingly adopting offset policies, so working rapidly to clarify and — where possible — to resolve these issues is essential”. For them, the controversies and associated ‘challenges’ can be classified as ethical, including the problem of ‘capturing’ the diverse values of nature and the transformations that it can cause on the ethical basis for conservation, social, related to social ‘preferences’ and acceptability, “technical” and “governance”. After listing the numerous disagreements, some of them intractable, in particular the ethical ones, and the risks, they recommend a ‘precautionary approach’ and propose that, if offsets’ achievement is uncertain, they may be called compensations instead.

A few years after the launch of the “net gain movement” as a new promise that the future hold, and considering the settling of deep controversies around biodiversity offsetting and the seemingly unresolvable character of some of them, a new impulse was given in 2019, just ahead of the discussions on the post-2020 global biodiversity framework, with three articles published in *Conservation Letters*, *Nature Communications* and *Nature Ecology and Evolution*. They were written by the same group of more than twenty people, most of them at the forefront of publications on biodiversity offsets in the past decade, and who were regrouped under the banner of the Science for Nature and People Partnership (SNAPP). The first authors are from the University of Queensland, Australia, while the others are from institutions like the Wildlife Conservation Society – WCS, the Biodiversity Consultancy, the IUCN, the Nature Conservancy, Biotope, the International Finance Corporation and Forest Trends (the same authors who were previously part of former BBOP). My intention here is not to provide an extensive analysis of the papers and of their propositions, but to show they are part of a specific dynamic of ‘policy innovation’ fuelled by major conservation NGOs.

The first article, “Local conditions and policy design determine whether ecological compensation can achieve No Net Loss goals” (Sonter et al. 2020), start bluntly by advancing that while offset policies have conquered the world, “failures are widely reported”. Studying actual and improvement possibilities of offset policies in four countries, they show that “even our best performing policies did little to slow regional biodiversity declines because compensation was only required for a subset of development sectors and expanding policy scope to regulate other types of development would require more land than would be available for compensation under our simulated development scenarios”. This leads them to conclude that the main way to halt biodiversity loss is the avoidance of impacts, that is the first step of the mitigation hierarchy, which should be informed by the possibilities (or impossibilities) to actually implement compensations.

The second article, describing the “new way forward”, is presented by the WCS in its newsroom in a spectacular manner as “Blowing Up Biodiversity Offsetting: Scientists Propose New ‘Target-Based’ Approach⁸³”, while the IUCN and the University of Queensland both titled “Biodiversity offsetting is contentious – here’s an alternative⁸⁴”. The joint diffusion of media release in the form of institutional articles by these three institutions, whose researchers are coauthors of the papers, show the intention of diffusing the proposition to a large public. Similarly, a session planned to take place during the postponed 2020 IUCN congress aim at “introduc[ing] target-based ecological compensation as a more strategic alternative that can yield better outcomes for both business and biodiversity”, and showing the participants “how it could be implemented in their jurisdiction or organization⁸⁵”.

The intention is clearly to leave behind the controversies on offsets and particularly on “averted loss” offsets which, they admit, requires a baseline of ongoing losses in order to allow a ‘no net loss’ claim to be valid. To achieve this, they propose an enlargement of the scale of biodiversity losses and gains calculations from project scale to jurisdictional scale⁸⁶, within which no net loss should be achieved, while also limiting the parameters to particular species and ecosystem having specific quantifiable targets (which could possibly be mostly focused on, or biased toward, emblematic species, as shown by an illustration of a video on target-based ecological compensation produced by the University of Queensland and which shows a map with koalas⁸⁷). This also raises the question of the integration of the modes of valuation of local communities, which remained largely virtual in case of offsets, as they now propose to align what is ‘valued’ as relevant biodiversity in a given place with national and global targets.

The paper also states that what they call a “managed net loss” would be acceptable if the present “amount of biodiversity” for “the particular biodiversity feature of interest” is above its assigned target, and as long as

⁸³ <https://newsroom.wcs.org/News-Releases/articleType/ArticleView/articleId/13807/Blowing-Up-Biodiversity-Offsetting-Scientists-Propose-New-Target-Based-Approach.aspx>

⁸⁴ <https://www.iucn.org/news/business-and-biodiversity/201912/biodiversity-offsetting-contentious-heres-alternative>
<https://www.uq.edu.au/news/article/2020/02/biodiversity-offsetting-contentious-%E2%80%93-here%E2%80%99s-alternative>

⁸⁵ Session for the IUCN 2020 Congress, “Designing and implementing ecological compensation that helps achieve biodiversity targets”.

<https://www.iucncongress2020.org/fr/programme/official-programme/session-43422>

⁸⁶ This movement recalls a similar question which was the basis of a conference held in France in 2018 and organised by the IRSTEA (The national science and technology research institute for the environment and agriculture) under the title “« Eviter Réduire Compenser » : et si on l'organisait à l'échelle du territoire ... ?” (“ ‘Avoid Reduce Compensate’: what if it was organized on a territorial scale ...?”) and which wanted to propose a reflexion on the ways to avoid the pitfalls of a project-by-project approach.

<https://ercterritoire.sciencesconf.org/>

⁸⁷ Youtube video, “An alternative to biodiversity offsets: Target-based ecological compensation”.

<https://www.youtube.com/watch?v=kQ-3rkcmQ9I>

“(a) the particular biodiversity feature is very common and widespread; (b) some losses at the jurisdictional level can occur without compromising the ecological integrity and function of the feature (e.g. population viability, intactness); and (c) continued, strictly managed drawdown to a predetermined target level is socially acceptable”. While it could be considered to be a detail in the design of this type of framework, the lack of precision concerning the people for whom it will be “socially acceptable” can be considered quite symptomatic, especially as they intend to shift the scales, of policies which do not acknowledge the ecological distribution disparities that were already widely critiqued with regard to the implementation of biodiversity offsets. And while they present the managed net loss to be appropriate only in exceptional circumstances, it could already be wondered how much of an exception it will be.

Their idea is to “adapt biodiversity offsetting to be better aligned with conservation goals” even if, a few years earlier, some of the scientists who signed this paper were claiming, as discussed above, that “buying or managing protected areas using funds from offsets cannot count toward meeting their previously-agreed targets without making the offset invalid⁸⁸”, and were recommending a separate accounting of areas created as offsets (Maron, Gordon, et al. 2015a). This doesn’t seem to be their recommendation anymore, and while they mention the risk of relying on private investment to reach conservation targets, it seems that that the critiques formulated by Apostolopoulou and Adams (2015) regarding the possible undermining of alternative conservation strategies by the spread of biodiversity offsets may be even more relevant in this case.

While it is suggested that their proposition will help set easier-to-calculate ratios (even providing an excel tool for this purpose) in relation to the jurisdictional conservation goals (and taking the example that if the goal is to double the extension of an ecosystem, a project that impact 1 unit should compensate 2 units), as it “clarifies and simplifies the expectations on and requirements of developers”, they also put forward that “this framework does not imply that proponents of development projects are expected to bear the entire burden of a jurisdiction achieving its particular biodiversity targets, nor that compensation alone be used to achieve targets. Indeed, the share that falls on developers is a policy decision for governments”. As we will see in the next chapter for the case of Colombia, this finally seems to resemble to the ways some governments are already setting the compensation ratios for each type of ecosystem, and does not seem to clarify the basis over which those policy decisions are to be made.

Interestingly, they also claim that this target-based framework draw lessons from other frameworks like the Reducing Emissions from Deforestation and forest Degradation and carbon compensation mechanism (REDD+), “where local forest protection contributes to achieving broader goals”. Doing this, they seem to put aside not only the wide failures and issues of this mechanism but also and more fundamentally the differences between the production of equivalencies for carbon accounting and the infinite number of combinations associated with biodiversity (Chateauraynaud and Debaz 2017).

Finally, the third paper focuses on discussing the possible policy translation of a “global goal of no net loss”, following a proposition by Bull et al. (2019) that all actions resulting in biodiversity losses and gains should be incorporated to a global framework directed toward an objective of ‘positive net outcome for nature’. Beside all the ‘technical challenges’ required in order to make it work which were already seemingly too high for project-based offsets, the authors note that this goal, which they consider to likely be “the most ambitious

⁸⁸ <https://www.uq.edu.au/news/article/2015/07/scientists-see-risks-biodiversity-offsets-misuse>

target that society can realistically achieve”, “would require equitable translation to country-level contributions” (Maron et al. 2019). As we will further see (particularly in Chapter 8), the elaboration and agreement over the scales to which offsets refer and to which they articulate or ought to become commensurable with are absolutely central in their design and for the demonstration of any efficiency, and are also one of its most contentious aspects, and the “equitable translation” that would become required in their new form will not be exempt of issues.

While those recent transformations are exemplary of what has been described as the failure of offsetting policies and as being symptomatic of the ‘zombie’ nature of neoliberal policies (see Lane and Stephan 2014 for an analysis of the zombie metaphor), Corbera et al. (2021) observed distinctively in the European Union and “escape in scale” to what they call a “policy refugia”. Indeed, they found that, beyond declared national failures, “offsetting survived in unheralded small-scale projects in peripheral jurisdictions, to be potentially taken up again when the national political environment proved more suitable”, and that they migrated at the same time to “international refugia” like the IUCN offsetting guidelines. While it is uncertain how the existence of those “refugia” may actually help the policy to “recolonize” national levels, nor how they may condition its recolonization, what appears is that the same type of instrument or concept can, according to the various conditions that are encountered by its promoters and the alliances they’re able to forge, as well as the perceived pertinency by the various institutions and levels of government, be variously implemented and adapted throughout those institutions and levels. These adaptations can then serve as guidelines, examples or models, whether inspirational or mandatory, and the production of offsetting policies can therefore be based on their circulation and transformation across places and levels, and on the establishment of novel scalar relations, both with regard to the implementation parameters and processes and to the understandings of biodiversity, offsetting or conservation.

3.7 Conclusion

For the IPBES, instruments that are described as part of ‘toolbox used in green economy policies’, including market-based instruments and biodiversity offsets, have a mixed efficiency and should be “carefully designed and applied to avoid perverse effects in context” (IPBES 2019c). In the Global Assessment (IPBES 2019a), biodiversity offsets are nonetheless considered to have a “potentially important role to play” despite the fact that “risks and challenges must be addressed for offsetting to deliver on its promise”. They therefore still consider them as a “promise” with “potential” but note that critiques emphasize the fact that, despite offsetting being part of the mitigation hierarchy, biodiversity loss caused by overdevelopment remain unaddressed. On the other hand, they also consider that their development could lead to foster new social norms by allowing actors to “enact values of environmental responsibility”. This statement thus sheds light on their practical understanding of the ways change may occur: in this case, new norms, understood as ethical orientations of a course of action, are considered to emerge through the ‘enactment of (preexisting and good) values’, which itself can be fostered by encouraging regulations.

But, according to Sullivan & Hannis (Sullivan and Hannis 2015), the differences between people and organizations in favour and those trying to counter offsets arise from fundamentally divergent value framings, and negotiations over the assumed (ir)rationality of biodiversity offsetting are thus located firmly within

political and ideological realms. While the actors with divergent standpoints acknowledge that the nature of their disagreements is at least partly political in a wide sense, including variations around valuations and ontological issues, their differences also lie precisely in what they consider as being the opportunity of displacing (or reframing) the debate from scientific disagreements (whereas ecological or economic) toward political ones.

In fact, they do not necessarily acknowledge their own positions as political, and ten Kate for example said that decisions on offsets are political (that is that the actors take political considerations as part of a set of considerations that drive their choices on offsets' appropriateness), but not that BBOP's position is political. On the other hand, while the promoters of offsets do not consider their position as political, they nonetheless intend to explain its limited success or some bad policy design by the lack of 'political will'. They therefore argue that offsets are politically neutral although they consider that specific decisions sometimes called technical regarding offsets are not just technical, accepting the political aspect of the technical decisions on offsetting but not of the offsets themselves and of their relations with developmentalist positions, relegating the 'political' to a techno-managerial practice. On the other hand, some opponents of biodiversity see this relation differently, and consider that the nature of what is 'protected' is transformed by and through the ways this 'protection' is put into place.

The role, potential of transformation and means of critique are subject to continuous discussion and redefinition. Advocating for critical analysis of global environmental governance, Lucy Ford (2003) considered for example that "a critical approach distinguishes critical theory from problem-solving theory, where the latter takes for granted the framework of existing power relations and institutions and is concerned with the smooth functioning of the system. By contrast, critical theory calls the very framework into question and seeks to analyse how it is maintained and changed". While this distinction may be useful, it actually also creates a false dichotomy which fails to acknowledge the nesting and interlocking of frameworks and scales, the circulation between them, and the fact that the difference between critical approaches and problem-solving ones doesn't rely on whether the 'framework' is questioned, but on which framework encompassing which processes does the valuation focus. The 'framework' discussed can then be relatable to what is defining the types of problems that ought to be resolved at a given scale or in a given context. As such, the differences of positions of actors on offsetting doesn't originate in whether their approaches involve ethical preoccupations or not, but on the focus of these preoccupations, the type of ethical approach, their problematization-means-solution articulation, their circulations along the gradient of critique and attempts for displacing the nature of the facts disputed.

CHAPTER 4

Protection of the environment and the emergence of biodiversity offsetting in Colombia

4.1 Introduction: peace and biodiversity in Colombia

My choice during my PhD to take Colombia as a case study to understand the relations between the development of biodiversity offsets and the transformations of environmental ethics was mainly driven by my interest for Latin America, due to my previous research and personal experiences, as well as by the fact that my first documentary exploration showed that Colombia was the first country in the continent to implement mandatory offsetting, and that a much smaller number of studies had been made there on this subject. Moreover, this research was the opportunity to continue and reinforce the relations already established by my research laboratory in Paris, the Pragmatic and Reflexive Sociology Group (Groupe de Sociologie Pragmatique et Réflexive — GSPR), hosted by the EHESS, with a number of Colombian researchers⁸⁹.

But before describing the development of biodiversity offsets in Colombia, some of the characteristics of this country must be specified, in order to understand the historical circumstances within which Colombian environmental protection laws and biodiversity offsets have been designed. A crucial relation that can first be taken into account is the one established in Colombia between peace and biodiversity, to which I was made aware during a seminar in Paris organized by the Colombia Peace and Biodiversity Initiative⁹⁰ and that I attended before my fieldwork. Indeed, while Colombia is recognized as hosting more than ten percent of the world's known species, it has also seen one of the longest internal conflicts of the world. As expressed by the Fifth Colombian National Report for the CBD (Ministerio de Ambiente y Desarrollo Sostenible 2014) in an understatement, while Colombia is a mega-diverse territory, “this is superimposed on an equally complex and

⁸⁹ It can in particular be mentioned the program between 2009 and 2011 of the Comité ECOS-Nord, “Les ressorts de la mobilisation internationale: des contextes locaux aux arènes cosmopolites. Le cas colombien”, between the GSPR and the Observatory of Networks and Collective Action of the University of Rosario - ORAC, coordinated by Francis Chateauraynaud and Juan Carlos Guerrero, as well as ongoing collaborations for the development of Prospero in Spanish.

⁹⁰ <https://paixbiodiversitecolombie.wordpress.com/>

diverse political, economic and social history”*. Its biodiversity is both threatened by legal and illegal activities and necessary for the livelihood of the rural part of the population, being therefore both a pillar for the construction of peace and a source of conflicts.

The armed conflict that Colombia has suffered, sometimes referred to as a civil war, lasted more than 50 years and was largely caused by the unequal distribution of land, which was among the most unequal of Latin America and concentrated even further during the decades of the war toward violent actors and others who took advantage of the weakened rights of the rural poor and their connections with state officials (Cramer and Wood 2017). It was hoped that the conflict would end with the peace accords of the Habana signed in 2016 between the Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias de Colombia – FARC) and the national government. Importantly, the peace accords included many actions that the government should start, including working on the reintegration of the ex-fighters and an Integral Rural Reform which aimed at facilitating land redistribution and the participation of rural communities in a territorial planning directed toward “socioecological sustainability”. It was therefore not the beginning of the peace, but of a process of peace construction, even if observers noted that as of now the first point is considered largely deficient and the second one virtually hasn’t started⁹¹.

While the number of people dying due to the conflict drastically lowered since the accords, the murders of social leaders, either human rights defenders, community leaders or local environmental activists (and among them a large proportion of women), as well as former combatants, increased severely, each year being worse than the previous one (120 killings in 2019 according to the United Nations High Commissioner for Human Rights). This situation, sparking outrage in the country, with human rights organizations keeping the count of the dead, is considered to threaten the peace and be largely due to the impunity of criminal organizations and the lack of will from the state to end it. The massive forced displacement of populations which happened during the conflict, which is at least in part due to the historically ambiguous role of extractive companies and their links to paramilitarism and violent territorial dispossession, also didn’t stop with the accords, because of ongoing confrontations between armed groups and with the Colombian army.

The war on drugs started in the 1990s by the USA government led in Colombia to the implementation of programmes of eradication of illegal cultures of coca through the arial spraying of glyphosate, leading to debates around the consequences on biodiversity and local populations of such an extensive use of the herbicide. While this practice was prohibited in 2015 by the then president of Colombia Juan Manuel Santos as part of the peace accords, the new president said on various occasions its intention to resume it to fight the extension in the recent years of the culture of coca. In contrast to the previous campaigns, the authorization now relies on the assessment and the decision of the National Authority of Environmental Licences (the ANLA, where I did my fieldwork but without focusing on this issue).

It is common for actors in Colombia, as it can be seen regularly in the media for example, to put forward the “incredible biodiversity of the country” and show pride in being in the shortlist of the megadiverse countries. But this statement is often quickly counterbalanced (and it is generally the logic of this dialectic) by the fact that it implies a great responsibility, for the planet, the next generations or, as it was framed by a branch

⁹¹ See for example the reports of the United Nations Verification Mission in Colombia or of the Colombian NGO Dejusticia.

of the Ministry of the Environment, the need to an ambiguous “greater sustainable use of the resources”. Indeed, the 2014 report from the Ministry of the Environment (Ministerio de Ambiente y Desarrollo Sostenible 2014) was listing the main drivers for biodiversity loss as follows: land use changes because of the illegal deforestation due to expansion of the agricultural frontier, in particular for cattle raising and palm oil plantations and the culture of coca, but also because of new road infrastructures, mines and hydroelectric power plants, urbanization, overfishing, biological invasions, water contamination due to mining, industrial agriculture and settlements, and climate change. Finally, the report considered that “the threats and challenges faced by biophysical systems are due to land use patterns and the insufficient valuation of these systems”* (Ministerio de Ambiente y Desarrollo Sostenible 2014).

Similarly to what happens in other countries, governmental institutions launch numerous campaigns for the protection of biodiversity, like the ‘Conservation Guardians’ initiative of the National Parks, for example, which aims at rendering the citizens sensitive to the impact of their consumption patterns, use of plastics and amount of trash produced. On other issues more specific to Colombia, one can note different emphases regarding what ought to be addressed and what seems also to be less debatable, as well as a great complexity. Those includes wild species trafficking, deforestation and large-scale illegal mining, and also the problem of social inequalities and inequalities in land distribution which are historically constitutive of Colombia and from which emerged a large number of conflicts and in particular those related to the environment and access to natural resources.

Another characteristic of the Colombian biodiversity is the fact much larger parts of it than in other countries still remain unknown, including the high biodiversity areas which often corresponded to conflict zones, and which new accessibility thanks to the peace accords makes a number of actors fear that they may become rapidly under threat (e.g. Sabater et al. 2017). Reviving the style of past expeditions from botanists who remain famous in the country, like José Celestino Mutis and Alexander von Humboldt, Colciencias, the public research administration, launched in 2016 the Expeditions Bio with the goal of sending researchers in the least known parts of the country. While these expeditions should serve to expand the country’s collections, another aim is to “evaluate the state of our ecosystems in order to generate information that can be used for our sustainable management policies”, and the presentation mixes considerations of duties, interest for the beauty of science, but also ‘opportunities’ and ‘potentialities’. This is also congruent with the 2012 National Policy for the Integral Management of Biodiversity and Its Ecosystemic Services (Política para la Gestión Integral de la Biodiversidad y sus Servicios Ecosistémicos – PNGIBSE), which intended to “positively articulate biodiversity and ecosystem services with sustainable development, and proposes an approach to biodiversity not as a problem to be solved but as a source of opportunities associated with the sustainable use and exploitation of ecosystem services”* (Ministry of Environment and Sustainable Development 2012).

It should also be noted that the Latin America continent in general, and Colombia in particular, is also the home of a large and dynamic academic community in the ‘critical’ tradition, of course in dialogue with the rest of the world, and which analyses current evolutions in terms of extension of capitalism and the reinforcement of extractivism (and its transformation in neo- or post-extractivism) as the basis of most Latin American economies. In Colombia, extractivist activities are continually expanding and concern mostly oil extraction (one of the biggest companies operating in Colombia is the national company Ecopetrol) and mining (in particular of coal, in the north-east of the country, and nickel), even if numerous authors (see for example

Ulloa and Coronado 2016) also include in this category the agroindustry as well as the hydroelectric power plants (which “renewable” label is contested). Indeed, those activities are considered key in the National Development Plan proposed by the government:

The Government of Colombia recognizes that environmental sustainability generates competitiveness and is a fundamental and cross-cutting criterion in the country’s development proposal. As part of the implementation of the National Development Plan 2010–2014 (NDP), environmental policies have been defined and plans, studies and strategies for the management of biodiversity and ecosystem services have been developed. The NDP proposes the expansion of mining, infrastructure and the agricultural sector as axes to boost development, and while the productive sectors are growing rapidly, environmental policies, plans and programmes are still in the process of being adopted.* (Ministerio de Ambiente y Desarrollo Sostenible 2014)

Along its economic importance, the extractive sector and the extractive model of development are considered to be at the origin of most of the environmental conflicts listed by the Environmental Justice Atlas in Colombia (Pérez-Rincón 2016), and the obligation of large projects to obtain an environmental licence to operate doesn’t avoid in many cases the emergence of conflicts linked to issues of environmental degradation and violation of rights (Munevar-Quintero and Valencia-Hernandez 2020), which are resolved through violence as well as through legal processes (Pérez-Rincón 2016). As expressed in the quote above, the Development Plan was calling for the expansion of the productive and extractive sector, and while environmental sustainability was recognized as important, this expansion largely outpaced the adoption of environmental policies that would control them.

Importantly, Colombia is also the home of a large population of Indigenous and Afro-Colombian people who regularly contest the idea of development pushed forward by the national government. While they are recognized specific rights by the Colombian Constitution, in particular giving them a degree of autonomy in the management of their territories, they often remain virtual, thus leading communities to build movements of resistance in order to have them respected. While the conflicts that emerge are sometimes considered to be ontological conflicts, they are also rooted in the defence of the land rights that those communities possess. Their opposition to developmentalist ideologies is fundamentally linked to the defence of a conception of the territory that is much more than a land that provides resources, but an extension of the body, a space both physical and spiritual, but also historical, and which is the basis of the collective existence and situated and specific experience of indigenous peoples. Some of them, like the Nasas from the north of the Cauca region of Colombia, looking into ways for maintaining their existence against the attacks of modernity, describe their political struggle as the Liberation of Mother Earth (Escobar 2018).

Being more than a ‘national context’, it also forms the reality of people living in various parts of Colombia, and that therefore participate in defining the issues raised by conservation policies as well as the implementation of large projects and of their social compensations and biodiversity offsets. Despite the acknowledgement of this history and contemporary reality, my research and fieldwork did not lead me to encounter all those aspects, or at least not always in explicit ways. I will nonetheless intent to weave the connections, in particular those made by the actors, and show the frictions between those different aspects and the implementation of biodiversity offsets.

This chapter will start by providing an historical analysis of the evolution of the environmental protection laws of Colombia, their descriptions of what is protected and the transformations that the term biodiversity

caused. This will also be the opportunity to see how those descriptions express different relations between the humans and their environment, and how those it relates to the right type of protection that the laws promote. In a second part, I will describe how a small group of people designed the Colombian biodiversity offsets policy, the choices that they made, and its reception by a diversity of actors.

4.2 Biodiversity perceptions and legislative transformations

After having described the difficulties to circumscribe the object ‘biodiversity’ and drafted some of the links between the cotransformations of knowledge and of environmental ethics that accompanied the developments of its uses in Chapter 1, this section will focus on the ways this relation developed in the case of Colombia. More specifically, it will aim at providing an historical context through an analysis of the evolution of the environmental protection legislation in Colombia as well as the ways the natural environment has been perceived up to its understanding in terms of biodiversity, and the impact this evolution had on the way its related threats and protection is envisioned. This will be the chance to see how specific descriptions of biodiversity are put into relation with distinct modes of preservation.

4.2.1 Evolution of the focus of the Colombian environmental protection laws

Since biodiversity offsets are in Colombia a legally defined instrument, which application is the hand of an administration that defines itself as “norm applicator”, a detour by the history of Colombian environmental laws is necessary to understand how it fits in as an addition to the preexisting environmental protection laws as well as other types of environmental compensations. Thus, to put in context the current laws relative to biodiversity protection, I will now present briefly the history of the main environmental laws of Colombia, so to show how did evolve over time what was considered to be worthy to be protected or cared about and what the reasons invoked to justify the protection measures were. It will then be shown how each of them describes the environment, nature or biodiversity they are taking about, and how are qualified the relations between what is described with the humans, the society or particular groups, depending on the content of the law, that justify taking action.

As shown in the Table 7, the first major law regulating natural resources has been passed in 1953 and was completed in 1959 with the creation of three different types of protected areas, namely the General Interest Reserves, focusing on forest economy and the protection of species of high commercial value, the Protective Reserves, that aimed at conserving forests regarded as helpful to protect the water, the human health, and to limit the risk of landslides, and finally the Natural National Parks, which goals are to conserve the “national flora and fauna”.

Table 7: Main environmental protection laws of Colombia.

Laws	Year	Focus
Decreto 2278 de 1953 / Ley 2a 1959	1953-1959	Forest Reserves / National Parks
Decreto-Ley 2811	1974	Renewable Natural Resources
Resolución 0316 de 1974 Resolución 0213 de 1977 Resolución 0801 de 1977 Resolución 0463 de 1982 Ley 61 de 1985, ...	1974-...	Protection of specific species
National Constitution	1991	“ecological Constitution”
Ley 99*	1993	Creation of the Ministry of the Environment and instauration of Environmental Licences
Ley 165	1994	Approval of the Convention on Biological Diversity
Resolución 1602	1995	Protection of mangroves
Política Nacional de Biodiversidad**	1996	National Biodiversity Policy which “makes reality the content of the CBD”
Política para la Gestión Integral de la Biodiversidad y sus Servicios Ecosistémicos	2012	Colombia’s National Policy For The Integral Management Of Biodiversity And Its Ecosystem Services
Plan de Acción de Biodiversidad	2017	Updated Biodiversity action plan
*First reference to biodiversity and to the mitigation hierarchy (and therefore compensation).		
**First reference to ecosystem services (as environmental services provided by ecosystems).		

Starting in 1974, a number of laws were passed to put specific species of flora, “which, for biological, genetic, aesthetic, socio-economic or cultural reasons, must be preserved⁹²”, under the figure of permanently “protected species”, therefore prohibiting their use or logging unless a special permit is given. This especially concerned at first species of trees and palm trees used for wood and considered in danger of extinction because of their overuse. While a number of palm trees are considered to be used for rural constructions or artisanal sculptures, a 1977 decree⁹³ considered that it had to be conserved “not only because of the great weave formed by its roots, which gives it an eminent protective, soil-forming and water-regulating character, but also because of its great landscape beauty”*. The same year, another decree⁹⁴ protected all the wild and endemic species of mosses, lamas, lichens, quiches, ‘chistes’, parasites and orchids along with all the plants forming their habitat because they were considered to fit the definition of protected species established a few years earlier. Taking another perspective, the Colombian Congress decided to adopt⁹⁵ in 1985 the wax palm (palma de cera — ceroxylom quindiuense) as Nacional Tree, pushing the government to create protected areas to “protect the national symbol and keep it in its natural habitat”, and prohibiting its cutting. Finally, at a national level, and building on the newly adopted constitution (see below) the government decided to protect the mangroves in 1995⁹⁶, for more ecosystemic reasons than previously, in particular as reproductive habitat of marine species, as a source of nutriments necessary to the ‘ocean food chain’, for the protection from erosion they offer and

⁹² Decreto 2811 del 18 de diciembre de 1974. Por el cual se dicta el Código Nacional de Recursos Naturales Renovables y de Protección al Medio Ambiente.

⁹³ Resolución 0801 de 1977. Por la cual se declara planta protegida una especie de la flora silvestre y se establece una veda.

⁹⁴ Resolución 0213 de 1977. Por la cual se establece veda para algunas especies y productos de la flora silvestre.

⁹⁵ Ley 61 de 1985. Por la cual se adopta la palma de cera (Ceroxylom Quindiuense) como Arbol Nacional.

⁹⁶ Resolución 1602 del 21 de diciembre de 1995. "Por medio de la cual se dictan medidas para garantizar la sostenibilidad de los manglares en Colombia".

their filtering capacities. Other species would then be protected by the regional governments. A large programme of protection of the paramos, this time shifting from species to ecosystems, also started a few years ago, raising concerns for the populations living there, many because they had flown zones of conflicts and thought that they may become prohibited from living there, generating difficult debates on how exactly to define and delimit the paramos and intense controversies on the type of activities that should still be allowed (see Buitrago 2016 for a critical analysis; and Cortés-Duque and Sarmiento Pinzón 2013 for a more general overview).

In 1991 Colombia changed its national Constitution, introducing numerous new rights and in particular the right to a healthy environment as well as specific rights for indigenous and Afro-Colombian communities. The Constitution also indicates that the State also has the duty to protect the cultural and natural wealth of the nation as well as the diversity and integrity of the environment, making Colombia the first Latin American country to mention in its constitution the protection of the environment. A 2012 project of law for the update of the Natural Resources Code noted that the additions made by the constitution made that the environment was now considered by the state through different lenses, which could also be considered as being different modes of valuation: it is first considered as a fundamental constitutional right, an economic tool for State interventions, it also describes a state of the natural resources and an area of planification, and a factor of national development. The General Environmental Law 99 of 1993 made a reference for the first time to biodiversity and created the Ministry of the Environment as well as the obligation for specific projects to obtain an Environmental Licence in order to operate (they were only required in the past to provide a much lighter “management plan”). The licensing process relies on the application of the mitigation hierarchy, stating that environmental impacts, described in the environmental impact assessment required to obtain an environmental licence, should first be avoided, then reduced, then mitigated and that the “remaining impacts” should be compensated (making it the first reference to environmental compensation in Colombia). In 1994, Colombia approved the Convention on Biological Diversity and then produced two successive National Biodiversity Plans, respectively in 1996 and 2012, the second one expanding the focus to take into account the ecosystem services.

To better understand how the descriptions of the environment evolved in the Colombian laws, and the evolution of its properties, especially those that were considered relevant and that mattered, it is useful to analyse how the laws define biodiversity and its relations to humans. The successive laws and plans are a rich material for analysis because, more than just putting forward new prohibitions, instruments or organizational transformations, for example through the creation of new institutions, they also express the motivations, in particular a certain understanding of the context, and justify the choices that are made. Regarding the definitions of biodiversity, I focused on the following points: how is defined the environment/biodiversity and what are its broad characteristics, and what are the stated past, present and future trends of the described environment or biodiversity. I then looked at how is defined or expressed the relation between this environment/biodiversity and human beings (or, when appropriate, to specific groups or populations) in terms of the broad definition or explanation of the relation; the statements on its necessity, benefits, risks and consequences of its loss; the associated legal rights; the questions of balance and sustainability; the (negative) generic impacts of humans on it; and the needs of regulation and legislation. I’ll focus mostly on the most fundamental aspect of those themes which is how these different relations relate to the core definitions of the

environment and the biodiversity, as shown in the Table 8. The descriptions in the tables are non-extensive selections or summaries of the most relevant content of the laws, and some parts that are repetitions of previous laws may not be included.

Table 8: Evolution of the characterization of the environment and biodiversity in the main Colombian environmental laws.

Laws	Year	Main descriptors	Definition/characteristics of biodiversity/environment	Relation to humans: definition/ explanation
Decreto 2278 de 1953 / Ley 2a 1959 (Reserves)	1959	forests natural resources flora and fauna		general interest
Decreto-Ley 2811 (natural resources)	1974	Natural resources environment including flora and fauna	interdependence of elements of the environment	common heritage of humanity public utility and social interest
National Constitution	1991	Natural resources environment	environment with specific diversity and integrity	right to a healthy environment
Ley 99, 1993 (Ministry of Env.)	1993	environment biodiversity natural resources landscape		country's biodiversity as national heritage and of interest to mankind
Ley 165 (CBD)	1994	biological diversity and its components ecosystem biosphere genetic resources	importance for the systems necessary for the life of the biosphere. "Biological diversity" means the variability of living organisms from any source, including ecosystems and the ecological complexes of which they are part; It includes the diversity within each species, between species and ecosystems. By "ecosystem" is meant a dynamic complex of plant, animal and microorganism communities and their non-living environment that interact as a functional unit.	common interest of all humanity intrinsic value ecological, genetic, social, economic, scientific, educational, cultural, recreational and aesthetic values
Decreto 1791 (Forest use)	1996	forest wild flora biological diversity environmental offer	Forests are an integral part and support of biological, ethnic and environmental diversity. Plantations maintain ecological processes .	natural forests and wild flora products as strategic resources of the Nation
Política Nacional Biodiversidad	1996	biodiversity biological diversity	Biological diversity has tangible components at the level of molecules, genes and populations, species and communities, ecosystems and landscapes. Among the intangible components are the associated cultural knowledge, innovations and practices . Biodiversity has a dynamic character in time and space.	Biodiversity is the patrimony of the nation, has a strategic value for the present and future development of Colombia, is the biological capital of the world and represents critical options for its sustainable development.

Laws	Year	Main descriptors	Definition/characteristics of biodiversity/environment	Relation to humans: definition/ explanation
Política para la Gestión Integral de la Biodiversidad y sus Servicios Ecosistémicos	2012	biodiversity natural resources environment ecological systems ecosystem services ecosystems	Biodiversity as expression of the different forms of life present on the planet, and as the basis of the well-being and quality of life of human beings. Natural resources and the environment, in other words, biodiversity	Closely related ecological and social systems territory as a socio-ecosystem human beings and their culture as integral parts of biodiversity Public value, strategic nature of biodiversity
Plan de Acción de Biodiversidad	2017	biodiversity social and ecological systems ecosystem services	The country's biodiversity must be understood in the light of its interaction with society.	socio-ecological approach and recognizes the interdependence between social and ecological systems , so to reorient society-nature relations high public value

The first environmental law considered focuses on forests because of their general interest for humans in terms of economic resource but also for the protection of water and human health. It is divided between forests that are considered resources and those hosting important national flora and fauna. The description of the generic relation to humans is then completed in 1974 by referring to the environment as a “common heritage of humanity” and as something of “public utility and social interest”. There is a first recognition of the fact that there’s an “interdependence of the elements of the environment”, completed in 1991 by stating that it also has a “specific diversity and integrity”. Those characteristics seem then to be pushed further with the first inclusion of the term biodiversity, with a definition that is the exact translation of the one used by the Convention on Biological Diversity, which includes all living beings and the ecosystems, while the definition of ecosystems include as well the “non-living environment”, somehow reintegrating the definition of the environment as a resource with the various elements of the environment that are considered when talking about impacts and pollutions. The concept of “strategic resource” is then introduced in the law regarding forest resources of 1994 but the forest is also becoming recognized as “an integral part and support of biological, ethnic and environmental diversity”, while plantations are also framed as something allowing to “maintain ecological processes”. In 1996, in the first National Policy of Biodiversity, the definition of biodiversity is expanded to include, on top of what was already considered as the tangible components, its “intangible components” that are “the associated cultural knowledge, innovations and practices”, or more simply the human culture(s). While it could have been understood that humans might be part of the living organisms included in the CBD definition, this is made explicit in the 2012 “Policy for the integral management of the biodiversity and its ecosystem services” which states that it should be considered “human beings and their culture as integral parts of biodiversity” and introduce the notion of “closely related ecological and social systems”, without explicating this relation and whether it is understood as a causal determinism similar to the theories of material culturalism. This relation becomes one of “interdependence” in the Action Plan of Biodiversity of 2017, also stating that “the country’s biodiversity must be understood in the light of its interaction with society”.

The original vocabulary used to describe the objects of the first protection laws, in particular the notions of “environment”, “forests”, “natural resources” and “flora and fauna”, did not disappear with the emergence of the concepts of “biodiversity” or “ecosystem services”, but those last ones have been used in addition to

them, sometimes as synonyms or placed into new types of relations (inclusion, dependence, interactions, for example). Nonetheless, it gradually transformed the way they are conceived, from a static exterior thing to something part of different interdependent and dynamic systems. On the other hand, the views that are expressed about what the environment and then the biodiversity are and their relations to human beings are shifting toward two complementary directions, which is the greater interdependence and the integration of human beings inside biodiversity. But it is also contradictory because it creates a kind of circular definition of biodiversity humans depend on it, have a strategic interest to keep it while being in it and related to it. It is the environment, what's around us while being inside us, and also us as well, since we are part of it. It is also our culture, but our sociosystems are not part of the ecological systems but in a relation of interdependence with them. It is our resources, but it would be awkward to consider humans as such (something that might be seen reflected in the organization's culture of some countries, including Colombia, in which what is called in other countries "human resources" is called "human talent"). And finally, despite all the statements in relation to the human position in relation to biodiversity, it is still admitted that a goal of the policies on biodiversity is to "reorient the society-nature relations".

It seems that there's a conceptual and ethical aim in the most recent laws to reach the widest perspective possible and to gather and include many elements into biodiversity. But, when it has to be translated into practical policies, there's a reframing and limitation of those definitions, from which humans are again excluded, as we will see in particular for the biodiversity offsets policy. Finally, it seems that the humans, or at least those who are writing the environmental laws, are still searching for their place in their conceptualizations of the "biotic component" (as categorized in the environmental impact assessments and biodiversity offsets), the "biodiversity" and the "ecosystems", a place that keep shifting, being more and more integrated while being at the same time re-excluded or ejected from those concepts. That seems to be a bit like Latour's "we've never been modern" theory but in reverse, the actors considering that their approach has been too modern and then trying to go toward the reintegration of the humans in nature but in a way that is always falling short of actually doing it. While voices calling for more ecology generally advocate for a higher integration of nature into society's concerns, and the economic actors for its 'internalization', what seems to be intended is also a replacement of humans into nature. But it might be an intractable problem, since it implies to go beyond modernity while at the same time staying within modernity's paradigm.

4.2.2 National biodiversity plans

According to the Humboldt Institute (Instituto Humboldt 2018), the first National Biodiversity Policy of 1996 was a step forward for the recognition that an intersectoral and decentralized strategy, including the promotion of the participation of the civil society, was required to enable the conservation and sustainable use of a biodiversity recognized as "the foundation of our daily life and is essential for the development of countries like Colombia"* . It was also the consecration of the biodiversity as "patrimony of the nation that has a strategic value for the present and future development of Colombia"* due to its economic potential, properties that were equally attributed to the environment in the natural resources law of 1974.

The human well-being which was dependent on access to natural resources and a non-degraded environment was then considered in 1994 to depend on a sustainable development based on the non-depletion of renewable resources, and then in 2012 on the preservation of ecosystem functioning that would the

continuation of the provision of their services. This allowed the 2012 to consider that the actions of preservation of the environment that had been done in the previous decades were not opposed to the development but, to the contrary, had contributed to the provision of ecosystem services on which human activities and well-being depend.

The new policy made much more references to the global degradation of biodiversity as well as to the issues caused by the climate change (which was only briefly mentioned in 1996) and the necessity to generate strategies of adaptation and to promote resiliency, since the relations between the permanency of ecosystem services and climate change had been already explored in a 2012 report on adaptation to climate change (Plan Nacional de Adaptación frente a Cambio Climático). This is linked in part to a transformation of the ecological paradigm which moves away from a static equilibrium of ecosystems toward dynamic transformations: “Under this scenario [of seeking resilience], it is recognized that in nature there are no static equilibria and that change and uncertainty are determining factors to be taken into account within the GIBSE approach”* (PNGIBSE). The new plan therefore gives a much greater importance to the uncertainty in the management of biodiversity and put emphasis on the new institutional flexibility that has to be constructed, including through learning and innovation processes, in order to face the spatial and temporal multiscale social, economic and ecological transformations taking place. This uncertainty is considered to have to be counterbalanced by an intensification of scientific research, but decisions also have to be integrated in a wider panorama including social and economic interests that are sometimes opposed to biodiversity conservation. Along this, in comparison to the previous document of 1996, which was following the logic of the CBD and therefore had a strong focus on preservation and the equitable sharing of the resources, the document of 2012 recognizes in a much more pronounced way the numerous threats to biodiversity and specific endangered species, showing a much greater sense of worry, and elaborate on the causes of degradation. It also makes much more references to debates and controversies, which goes along with its intention to include a wider set of actors, and to the conflicts that exists between those actors and the necessity to elaborate strategies to resolve existing and emerging socioenvironmental conflicts:

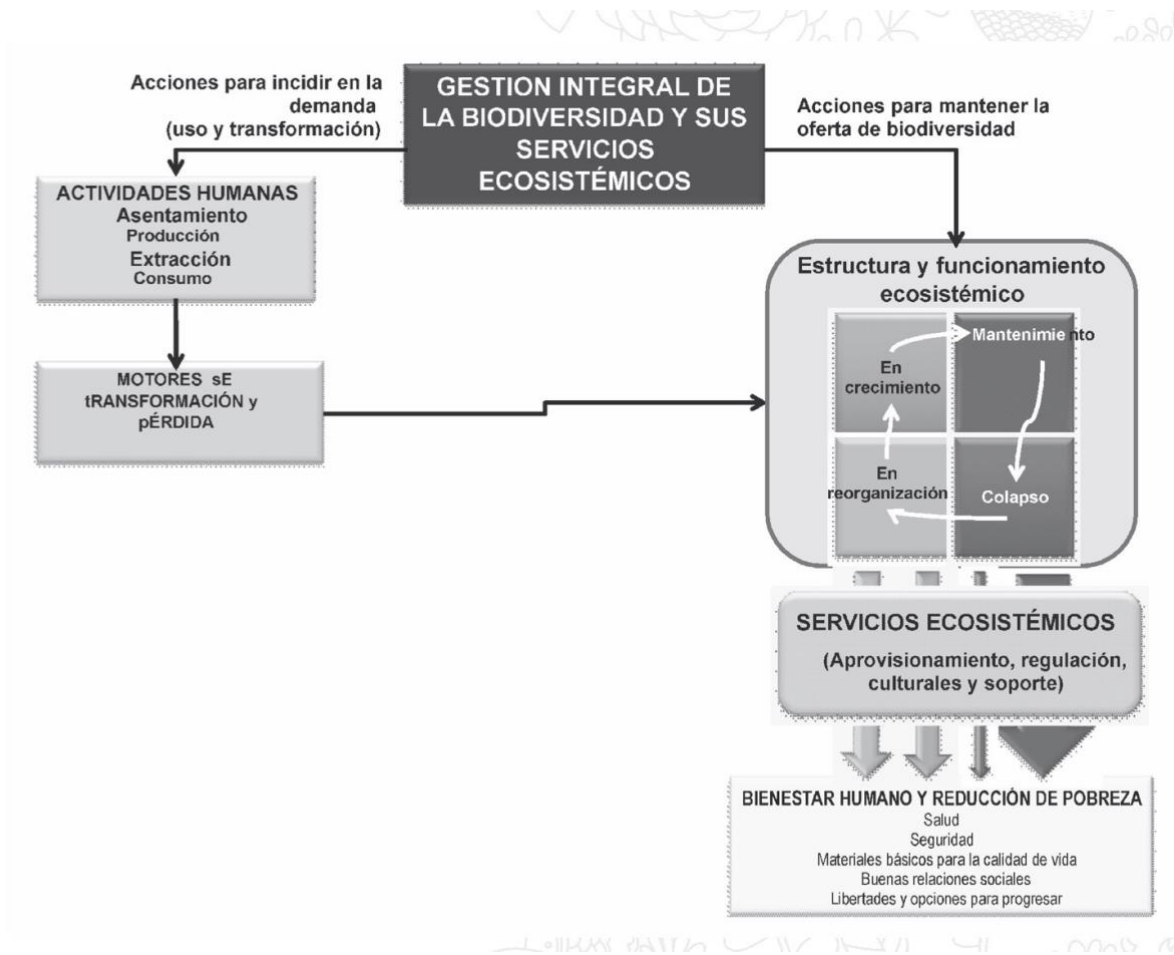
The lessons learned by the country after more than 15 years of management guided by this GNP, the development of new concepts and schemes related to the issue, as well as the need to incorporate an updated vision of the conflicts and disarticulations surrounding the actors involved, have generated the need to review and update the policy, to adjust it to the new conceptual trends and the emerging challenges resulting from global environmental change of human origin.* (PNGIBSE)

The 2012 biodiversity plan also moved toward a vision of “biodiversity management as an integrated process with a socio-ecological and cross-cutting approach to all sectors of society”* (Instituto Humboldt 2018) and aim at putting the responsibility of biodiversity preservation in the hands of the wider society in order to overcome “the old idea of biodiversity as an asset that is the responsibility of public sector entities alone”* (PNGIBSE).

The new approach aiming at fostering a “comprehensive management” (*gestión integral*) of biodiversity led the authors to produce a framework (see Figure 25) helping to schematize the field of action of the plan, both on the human actions which drive the loss of biodiversity (which they call the “demand”) and the functioning of ecosystems (which they call the “offer”), linking the latter to the provision of ecosystem services and then to human well-being and the reduction of poverty. The goal of the actions of the plan on two elements

considered in opposition is to allow maintaining “a balanced relationship between natural supply and use demand”*, a description strongly echoing the framing of biodiversity offsets.

Figure 25: General scheme of action elaborated for the comprehensive management plan of 2012 (Ministry of Environment and Sustainable Development 2012).



4.2.3 Main institutions

The law 99 of 1993 that created the Ministry of the Environment (now the Ministry of Environment and Sustainable Development – MADS) to take over the functions that were fulfilled by the former National Institute of Renewable Natural Resources and of the Environment (Instituto Nacional de los Recursos Naturales Renovables y del Ambiente – INDIRENA), also created five new institutes that would inherit the work from other smaller centres but which were given stronger roles. These are the Institute of Hydrology, Meteorology and Environmental Studies (Instituto de Hidrología, Meteorología y Estudios Ambientales – IDEAM), the Institute for Marine and Coastal Research “José Benito Vives de Andreis” (Instituto de Investigaciones Marinas y Costeras “José Benito Vives de Andreis” – INVEMAR), the “Alexander von Humboldt” Biological Resources Research Institute (Instituto de Investigación de Recursos Biológicos “Alexander von Humboldt”), the Amazon Institute for Scientific Research “SINCHI” (Instituto Amazónico de Investigaciones Científicas “SINCHI”), and the Pacific Environmental Research Institute “John von Neumann” (Instituto de Investigaciones Ambientales del Pacífico “John von Neumann”). Those five institutes,

along with other existing research institutes and the universities, are expected to provide a scientific and technical support to the Ministry of the Environment.

The Humboldt Institute considers itself a “bridge between knowledge and decision-making in biodiversity” and, inspired by the IPBES, pride itself in recent publications (Instituto Humboldt 2018) to be a leader in becoming a national “science-policy interface”. Its goal is to produce knowledge about the biodiversity of the country, including a national biodiversity inventory, and organize it into an accessible database, but also work for the creation and the stabilization of conceptual elements that can be used into biodiversity policies, as well as the translation of global objectives like the Aichi Targets into the Colombian context, and the capacitation of regional authorities.

The law also created the National Environmental System (SINA), that would serve as a coordinating mechanism between the different public and private institutions at the different scales with the goal to allow a successful implementation of the new constitutional principles and environmental laws, as well as decentralized regional environmental authorities in the form of 26 Regional Autonomous Corporations (Corporaciones Autónomas Regionales – CARs) and 7 Sustainable Development Corporations (their type depends on the importance of their ecosystems), all subordinated to the Ministry of the Environment.

Finally, and as we will see in greater details in the following chapters, the National Authority of Environmental Licences (Autoridad Nacional de Licencias Ambientales — ANLA) was created in 2011 to move the licensing process for large projects away from the Ministry of the Environment toward a relatively more autonomous entity. Smaller projects or projects of the type that do not enter in the attribution of the ANLA can be subjected to obtaining a licence from the regional entities.

4.2.4 Biodiversity entanglements in Colombian press articles

In order to see the different ways by which biodiversity is captured by heterogeneous milieus and how each reconfigures its meaning, framing and relations, I’ve built a corpus of 3000 articles from the Colombian media mentioning biodiversity at least twice and ranging from 1994 to 2018, and then grouped them into non-exclusive clusters with the software Prospero (see Methodological section). As the Table 9 shows, preoccupations around biodiversity are actually relating to very different sets of topics within which they enter in friction to finally generate very distinct types of biodiversities.

The first and larger topic relate to multi-scale discussions that link anything from the role of the states, the relations to other countries, the role of companies, the media, large and small communities, the guerrilla and the militaries, and in which biodiversity is not the main theme but is mentioned among many other preoccupations. This is for example the case of a public letter that the ex-president of Colombia Manuel Santos wrote at the beginning of the year 2018 to describe the achievements of his presidency, described and partly reproduced in an article of the newspaper *El Espectador*, and in which he talks about all what he did but also expresses, in a few sentences of a four-page letter, the importance of not sacrificing the biodiversity to the economy and pride himself in the extension of protected areas, the delimitation of the paramos and the development of renewable energies:

When thinking about our country’s economy, we must also think about the long term. In that sense, it is essential to ensure sustainable development. We are one of the most biodiverse countries on the planet, and one of the most exposed to the risks of climate change. We must protect this wealth and

offer opportunities for progress to Colombians today, but without sacrificing future generations. We have made progress. We have delimited our páramos and more than doubled the protected areas. We have laid the foundations for the development of alternative renewable energies. We must also encourage the development of biotechnologies that have enormous potential for growth and income, but always, always protecting our biodiversity⁹⁷.*

Table 9: Clusters produced with the software Prospero on a corpus of articles about biodiversity.

	Relevant entities in the clusters (the names ending with '@' are sets of nouns designating the same entity)	Number of entities in the cluster
Cluster 1	COLOMBIA@ EL-PLANETA@ ESTADO-CENTRAL@ región países colombianos proceso América ELITES@ regiones BRASIL@ riqueza trabajo lugar TRANSPORTES@ BIODIVERSIDAD@ sector INTELECTUALES@ Santos presidente dólares Bogotá MEDIOS-DE-COMUNICACION@ MILITARES@ NATURALEZA@ EMPRESAS@ territorio COLOMBIANOS@ EUROPA@ ESTADOS-UNIDOS@ temas GREMIOS@ ECUADOR@ GUERRILLA@ zonas proyecto acuerdo paz tipo PERU@ turismo tiempo ONU@ director desarrollo conservación protección MUNICIPIOS@ personas comunidades crecimiento DEPARTAMENTO@ Ambiente recursos proyectos zona PUEBLOS-INDIGENAS@ áreas deforestación TRABAJADORES@ departamento población investigación economía coca	65
Cluster 2	actividades BIODIVERSIDAD@ conservación minería áreas zonas NATURALEZA@ ecosistemas bosques agua comunidades recursos riqueza tipo tiempo sistema desarrollo proyectos impacto turismo EL-PLANETA@ TRANSPORTES@ MUNDO-RURAL@ territorio construcción producción tierra uso	28
Cluster 3	CAMBIO-CLIMATICO@ BIODIVERSIDAD@ NATURALEZA@ EL-PLANETA@ impacto ONU@ desarrollo ecosistemas protección conservación deforestación uso países recursos bosques aguas agua	17
Cluster 4	conocimiento desarrollo recursos BIODIVERSIDAD@ información investigación NATURALEZA@ acceso comunidades COLOMBIANOS@ protección conservación EMPRESAS@ trabajo INTELECTUALES@	15
Cluster 5	especies fauna aves plantas animales ecosistemas zona área lugar BIODIVERSIDAD@ EL-PLANETA@ zonas bosques región INTELECTUALES@	15
Cluster 6	vida NATURALEZA@ territorio BIODIVERSIDAD@ riqueza animales región EL-PLANETA@ personas protección COLOMBIANOS@ población tiempo	13
Cluster 7	CONGRESO@ ESTADO-CENTRAL@ TLC presidente ELITES@ ESTADOS-UNIDOS@ COLOMBIANOS@ ECUADOR@ acuerdo paz temas PERU@	12
Cluster 8	inversión EMPRESAS@ sector desarrollo recursos crecimiento economía dólares mercado proyectos GREMIOS@ turismo	12
Cluster 9	bosque bosques ecosistemas deforestación zonas hectáreas agua áreas zona CURSOS-DE-AGUA@ área plantas	12
Cluster 10	Parque área zona hectáreas departamento CURSOS-DE-AGUA@ MUNICIPIOS@ zonas DEPARTAMENTO@ áreas lugar	11
Cluster 11	productos mercado producción EMPRESAS@ GREMIOS@ acceso MUNDO-RURAL@ crecimiento desarrollo sector uso	11
Cluster 12	ALIMENTACION@ agua producción población MUNDO-RURAL@ uso BIODIVERSIDAD@ impacto crecimiento desarrollo recursos	11
Cluster 13	cultivos coca MUNDO-RURAL@ hectáreas zonas producción TRABAJADORES@ áreas uso bosques zona	11

The second cluster relates to the biodiversity at a local level, with a more ecological vocabulary, showing the preoccupation for the impacts of activities, projects and mines (the negative impacts but also the local

⁹⁷ “No voy a interferir para nada en su trabajo”: Santos a su sucesor, February 15, 2018, El Espectador. <https://www.elespectador.com/politica/no-voy-a-interferir-para-nada-en-su-trabajo-santos-a-su-sucesor-article-739270/>

projects developed by large companies under the banner of ‘corporate responsibility’) as well as the dependence of local communities on biodiversity and the type of ‘valorization’ that they can make of it, in particular through the development of ecotourism. The third cluster shows biodiversity in its ‘global’ approach, linked to international institutions like the UN but also its relation to the hegemonic global environmental issue that is climate change, and is considered through its relation to very generic categories like water, forest, ecosystems, deforestation and conservation. The fourth cluster concerns the relation between the production of knowledge on biodiversity and job creation, whether it is through in the agriculture, through new biotechnologies or in conservation. The fifth cluster concern the scientific biodiversity and its vulgarization in the media at the occasion of the discovery of new species, as well as a more popular understanding of biodiversity, portraying surprising or rare animals and plants as its incarnation, putting forward interesting places to visit or commenting the opening of a new zoo. The following group is largely similar to the previous one, but putting forward the loss of biodiversity and insisting on the need to protect it.

Cluster 7 refers to discussions between international actors on two very different themes but involving in large parts the same actors and generating concern relatively to their impacts on biodiversity: the first relative to the negotiations from 2004 around a free-trade agreement between Andean countries (through the Andean Community alliance which is composed by Bolivia, Colombia, Ecuador and Peru) and the USA, which generated worries that the extension of the agriculture would have on biodiversity and that genetic resources would be exploited; and then to the peace agreements between the Colombian government and the FARC. Cluster 8 expresses the embedment of biodiversity issues into larger discussions focused on the economy, which again include some reports over the free trade agreements in negotiation but also describe the dependency of the economy on a biodiversity viewed as a resource, and its link to economic investments, development, markets and tourism. The next cluster reveal articles dedicated to commenting on the evolution of the deforestation trends, with their locations and extent, as well as its impact on water streams. Cluster 10 is about the creation of new parks, reserves or protected areas in Colombia or comments on issues with them, describing their extension but also their locations in a specific department and municipality. The eleventh cluster relates to considerations on the relation between agriculture and biodiversity, and the aim of rendering production more sustainable, including through the creation of new labels and technologies of traceability, and to find markets for new products. Linked to the previous one but with a different focus, cluster 12 shows the relations established between biodiversity and food production, and the importance it has for the population. Finally, the last cluster relates to the issue discussed above on the varying extent of coca production and its impact on the forest cover.

Those topics do not exactly match the six thematic areas considered by the National Biodiversity Action Plan of 2017 (that is the practical strategy for the implementation of the 2012 National Policy) and which are: biodiversity, conservation and care of nature; biodiversity, governance and creation of public value; biodiversity, economic development and quality of life; biodiversity, knowledge management, technology and information; biodiversity, risk management and provision of ecosystem services; biodiversity, co-responsibility and global commitments. It is nonetheless interesting to note that they do share some characteristics in the ways they have been defined.

As we will see, biodiversity offsets are mainly linked to issues of infrastructure, development and economy. Nonetheless, they intersect with many other issues, approaches and larger themes in which biodiversity is considered to have a role or is taken into account, like the ones that were described by the

different clusters. While those clusters do not represent at all an exhaustive understanding of the different ways to grasp biodiversity issues, it allows already to have a glance at their variety, and to foresee how the descriptions of biodiversity emerging by the actors involved with biodiversity offsets and the devices operating them may likely collide with the views of actors immersed in distinct milieux.

4.3 A variety of compensations reflecting diverse modes of valuation

The rising concerns about the impacts of large projects on specific aspects of the environment led Colombia, a country where the idea of sustainable development is still extremely embedded, to follow a global trend that started at the beginning of the century and develop their own biodiversity offset policies, with an implementation that started in 2012. As described in Chapter 3, while they are considered adequate by some actors to compensate some impacts, this only works within a wider narrative focusing on the conjunction of two phenomena: the necessary continuation of extractive and industrial activities as well as the development of new infrastructures on one hand, and the erosion of the biodiversity on the other. In the dilemma that is generated, biodiversity offsets can be seen as a relevant instrument. This context of crisis and the subsequent offsetting response are then indicative of evolving political normative choices about what matters and to which extent, as well as a number of specific understandings of the nature of the biodiversity and of the variety of its relations with generic human beings as well as specific social groups.

This section will therefore focus on the way the first Colombian biodiversity offsets manual has been developed, around which actors, and how the technical choices that it includes have been made. This will be the opportunity for a first analysis of what offsetting means as well as to see the kinds of knowledges on which it depends and the modes of valuations which defines its modalities.

4.3.1 Environmental licensing

Following the introduction of the Law 99 of 1993, a number of activities considered to have the potential to cause a “serious deterioration to renewable natural resources or the environment or introduce considerable or noticeable modifications to the landscape” became subjected to the obtention of environmental licences to go forward. The main criterion was the type of project but for many of those types it was only required for the “large” projects. In particular, licences became mandatory for all hydrocarbon projects from exploration to refining, large mines, dams and power plants, electric transmission lines of the national system, large seaports and international airports, and national transportation infrastructures⁹⁸. Besides those projects, a licence also became mandatory for the production and importation of pesticides and other controlled substances, as well as the “introduction to the country of parents for the reproduction of foreign species of wild fauna and flora that may affect the stability of ecosystems or wildlife”.

⁹⁸ For a detailed list of the projects subject to licensing and to which biodiversity offsets are required, see MADS, Manual para la asignación de compensaciones por pérdida de biodiversidad, Anexo 3, 2012.

The environmental licence, as defined by the law and beyond being an authorization of the project, also contains an environmental managing plan with requirements that should be complied by the beneficiary with regard to the “prevention, mitigation, correction, compensation and management of environmental effects of the work or authorized activity”, that is the specific measures imposed by the authority for the respect of the different elements of the mitigation hierarchy. While this was the first mention of environmental compensations in the Colombian laws, these were only given a definition in the decree 1220 of 2005, further detailing environmental licences regulations, as “actions aimed at compensating and rewarding communities, regions, localities and the natural environment for the negative impacts or effects generated by a project, work or activity, which cannot be avoided, corrected, mitigated or replaced”. Interestingly, in this decree the impacts considered are environmental, but the general definition of the compensations include as beneficiaries communities, regions, localities and the natural environment without discrimination or separation.

4.3.2 The different types of environmental compensations in Colombia

In parallel to the environmental laws regulating the use of natural resources and rendering mandatory the obtaining of an environmental licence for specific activities, with guidelines indicating that all residual environmental impacts, including cumulative ones (although it is not defined), have to be compensated, a number of specific compensation mechanisms were also gradually designed in Colombia, some applying regardless of the obligation to obtain or not an environmental licence for the actions or project causing the impacts (in a broad sense). As shown in the Table 10, Colombia now has four main types of compensations that carry different “environmental” perspectives, in addition to another instrument related to the use of water. The latter isn’t considered as a proper compensation but is often discussed or presented along with the other compensations and bear a number of similarities to them, reason why it was included in the table. It is important that all those compensations are non-exclusive, which means that they all apply independently and if an area impacted by a project meets the criteria for multiple compensations, they should all be applied.

Table 10: Environmental compensation Laws of Colombia

Compensation Laws	Year	What it is about	What impacts are compensated	Responsible entity
Laws on Protected species	1974- ...	Compensation for impacts on protected species	Species and their habitat	Ministry of the Environment or Regional authorities
Law 99 of 1993	1993	Mandatory inversion of 1% for water use	N/A	ANLA
Decree 1791 of 1996	1996	Use of forests and compensations	Trees	Ministry of the Environment
Resolution 1526 of 2012	2012	Compensations for removing areas from existing forest reserves	Areas of reserve	ANLA
Manual of compensations for the Biotic Component	2018	Biodiversity offsetting v2 + update of other compensations	Ecosystems + Trees + areas of reserve	ANLA for large projects and adaptation by the regional authorities for smaller ones

a) Compensations for the lift of protection of protected species

In accordance with the more than sixty resolutions passed from 1974 to protect specific species, the projects that may impact them have to obtain a partial lift of the protection from the Ministry of the Environment or the regional authorities, depending which had placed the species under protection. While those resolutions do not indicate the necessity of compensating the lift, some authors have found that it is sometimes accompanied by a compensation with an area of equivalent size to the one affected (Sarmiento, López, and Mejía 2014), but it seems to be only occasional. Since a number of protected species of flora are epiphytes, meaning that they live on other species, like a number of orchids for examples, this sometimes leads to non-trivial calculations. For epiphytes, compensation sometimes consists in the attempt to recreate their habitat and, when possible, to move the individuals in their new location, like it is commonly done with animals.

I will now take a few examples of decisions that were taken by the ministry with regard to the lift of protection at the request of companies during their process of obtaining an environmental licence for their projects. By entering into the details of those decisions, it is shown how the protected species are qualified, put into relation with the ecosystem to which they pertain, and how the compensation is established. This is important to understand the modes of valuation of those species but it will also be helpful to compare with the other types of compensation are functioning and in particular how biodiversity offsets have been designed and are implemented in Colombia.

In a resolution from 2005 attributing an environmental licence while lifting the protection on a number of oak trees for the construction of an electric line⁹⁹, the ministry describes the successive considerations on the state of conservation and status of the species for which the company is requesting the lift. The species *Quercus humboldtii* (oak) was first protected in the majority of the Colombian territory in 1974, the Humboldt Institute classified it as being under low threat but depending on its conservation, interpreted in the document as a risk of becoming vulnerable in the future, then a meeting of the newly formed Coordinating Committee for the Categorization of Threatened Wild Species in the National Territory advised the Ministry not to remove its protected status, in particular since oaks are associated to “many other species of flora, fauna and microorganisms that can be affected if its use isn’t controlled”, but they also considered that a sustainable use of oaks could be viable if certain measures of management were implemented, in particular measures aimed at repopulating the species in areas subject to restoration. For these reasons, the document says, the lift was considered “environmentally viable” and authorized to the condition that the company investigate the presence of oaks in its area of intervention, develop actions of conservations as possible and “establish and isolate four hectares in areas adjacent to the line corridor or substation sites with the oak species” (the document does not present the quantification of the impacts) that they should monitor for five years. In another resolution¹⁰⁰, the relocation of three 1,5 m high protected Columbian pines has been authorized, considering that it is a species which is tolerant to displacement as long as the conditions of the new site are similar to those of the original one, and under the condition that a management plan that includes irrigation, pruning and fertilization activities as well as regular reporting. For another project¹⁰¹, which was the construction of a road, 172 phorophytes (trees and large plants which are the hosts of the epiphytes species under protection) were found in the 20

⁹⁹ Resolution 1514, 14 October 2005, MADS.

¹⁰⁰ Resolution 0205, 3 February 2010, MADS.

¹⁰¹ Resolution 1976, 19 October 2018, MADS.

hectares going to be impacted by the construction, with a variety of vegetation cover types and within which a total of 551 trees were found. The calculation of the compensation is then made with a factor of 1:3 (the reason for this choice isn't provided but, as we will see, a number of ratios with unspecified calculations methods are considered to originate in a friction between subjectivity and conventions), and it is then proposed that it would be replanted 1653 trees, which "in this context and for this amount to be distributed equitably and taking into account that the chosen areas may have a percentage of original vegetation, the company must recover a total of 3 hectares", through ecological rehabilitation and restoration for the duration of 3 years with semestral monitoring and reporting.

To respond¹⁰² to the request, again for the building of a transmission line, of the partial and temporary lift of the protection on 16 396 individuals, mostly tree ferns but also orchids, bromeliads and some of the groups of mosses and liverworts, the office of the Ministry considered pertinent to restate the various qualities and importance of this flora, as expressed by a previous analysis of the project. These "technical considerations" present the types of vegetation cover impacted and their location, and then the national context, which is that "Colombia suffers a severe process of fragmentation and destruction of ecosystems" which may lead to the disappearing of some species. They express that the impact of the project on those species will affect their provision of a number of environmental services, which they detail for each, leaning for the ferns on the justifications expressed in the decrees protecting them (which is important because it is an "eminent protective character, soil forming and water regulator, as well as for its great scenic beauty"), indicating for the other species that they are considered important because they "participate in the cycle of water and nutrients, and because they can serve as habitat and food for a large number of organisms". But these "environmental services", which seem to refer to the functions that specific species performed within or for the ecosystem, participating in maintaining it, are then mixed with the functions that they perform for the provision of ecosystem services directed toward the "area" in general, external to the ecosystem, and which beneficiaries are usually humans. These can be of provision (water), since "it is evident that in the area to be intervened there is an important biological diversity, that due to the intervention to be carried out, some species of said diversity will be lost or will be exposed, thus losing the provision of services that can be obtained from it", but also of regulation or of support. Moreover, some of the individuals are located in areas called cloud forests which, they say, are themselves considered by the Humboldt Institute to be both of "high priority on a global scale", due to their species richness and strategic importance, and fragile, in particular due to their high vulnerability to climate change associated with a high pressure on them. Finally, the ferns are described as being fertile, and composed of young and adult individuals, "which shows that there is a supply of genetic material important for the population dynamics of these species". The only action imposed by the Ministry in this case to the company was to make sure that the individuals of the mentioned species remaining near the infrastructure have a habitat in good conditions and that the company develop actions, in coordination with the regional authority and a university, that would participate in the resiliency of the ecosystems present in the zone of indirect influence of the project.

As expressed in those examples, the protected species of flora and the particular individuals which are the object of the lift of protection are considered under a great variety of lenses. These include their legal status and the relations between this status, the scientific classification in taxonomic terms but also in terms of threat,

¹⁰² Resolution 1305, 9 July 2010, MADS.

depending on their geographical and administrative location but also the type of ecosystem in which the specific individuals are found. Their relations to other species (perceived depending on their categorizations) are also considered in terms of functional dependencies but also in terms of services, which are then expanded to the ecosystem itself and to the expected functions that the ecosystem is then expected to fulfil so to provide its ecosystem services. The analysis made also takes into account the availability of information on a number of other parameters, like the capacity of the “individuals” to be moved and under which conditions, which depends on the location, their fragility, the type of environment or habitat where they will be relocated to, and the care that will be given to them. But temporal and geographical scales can also be shifted, so to articulate the situation under review with the evolution of the protected species over the years and in relation to the biodiversity challenges faced by Colombia, but also with their pertaining to an ecosystem of ‘global’ importance, its relation to climate change in terms of usefulness (carbon capture, erosion, etc.) or fragility, and to its threats that human activities may cause to them here and elsewhere. Temporal and spatial scale are again shifted when the fertility state and genetic variability are considered in relation to the status and valuation of the individuals that may be subjected to removal or displacement. As we will further see, this already strongly suggests that valuations of species, on one hand, and their ‘compensability’, on the other, rely on the articulation of particular properties of those species and particular preoccupations, including accounting for their role in a causality chain, through the definitions of relevant scales.

b) Compensations for forest use

The compensations for the use (logging) of forests were established in 1996 and are the first type of compensations to be legally defined in quantitative terms in relation to the impacts. They only apply to situations in which a whole area is logged (which they call ‘unique use’), usually to change its ‘purpose’, and not to ‘sustainable logging’ (without clear cuts) and forest management. In this case, the law states that, “when for reasons of public utility it is required to subtract forests located on public domain lands to carry out unique forest uses, the affected area must be compensated, at least, by another of equal coverage and extension, in the place determined by the entity administering the resource”. When the logging is on public lands, the compensation therefore focuses on the reforestation of another area, of an extension equal to the one impacted. But when it isn’t, the law only indicates that the compensation is up to the regional entities. While the quantity is expressed in area, the usual understanding was tree density had to be of one thousand trees per hectares, which is why was often referred to as a tree-by-tree compensation. In general, the forest impacted wasn’t qualified by the type of ecosystem or even the type of trees that will be logged, nor was indicated the type of trees that should be used in the reforestation. This led over the years to numerous (according to my interviews) miscompensations with non-native trees or reforestations in the forms of monoculture plantations.

c) Compensations for the removal of areas from forest reserves

When a project aim at implementing a project in an area that was declared as a forest reserve, a status established in the Law 2 of 1959 and which is different from natural reserves and parks, the developer must first request the removal of this area from the reserve. When the authorization of removal is granted by the

Ministry of the Environment, the Law 145 of 2011 established that the environmental authority has to impose a compensation. For a ‘temporary removal’, the Resolution 918 of 2011 established that at the end of the project the area should be ecologically restored, actions which were further defined in the Resolution 1526 of 2012 as “the reparation of the processes, the productivity and the services of an ecosystem”. For ‘definitive removals’, the compensation should be done “with an area of equivalent ecological value”, which was then précised as “the acquisition of an area equivalent in extension to the removed area, in which a restoration plan duly approved by the competent environmental authority must be developed”. It is interesting to note in this last evolution the shift from an “area of equivalent ecological value”, which seemed possibly more just but, since it is not well defined, could lead to difficult calculations of the relation and equivalencies between extensions and ecological values, and the subsequent “area equivalent in extension”, which brings simplicity but put aside the considerations of ecological value.

A spatial parameter was also introduced for this type of compensation, indicating that it should be done preferably within the area of influence of the project for which the compensation has been established. If no available area is found in the area of influence, the compensation can be done outside of the forest reserve in areas that have been defined as priorities by the regional environmental authority.

d) Compensations for biodiversity loss

Finally, the compensations for biodiversity loss, which are similar to biodiversity offsets, have been made mandatory for the projects subject to environmental licensing from the national authority by the Resolution 1517 of 2012 establishing the ‘Manual for the Assignment of Compensation for Biodiversity Loss’. Built in contrast to the other compensations, which lacked methodologies for their application, the Manual promote the respect of the mitigation hierarchy and aims at the achievement of a no net loss of biodiversity by using the new criteria of ecosystem equivalency and a varying ratio for the calculation of compensation, which rationale will be detailed below.

A 2014 report of the OECD on the evolution of Colombian environmental laws and analysing its trajectory toward a green growth considered that “the most recent innovation in the use of market mechanisms is the introduction of compensation for biodiversity loss” (OECD/ECLAC 2014), even if the status of market instrument is not agreed by all actors in Colombia since there isn’t an actual market nor biodiversity credits to be bought or exchanged.

e) Mandatory inversion of no less than 1%

While it is not strictly speaking a compensation, it is important to mention the instrument that was referred to in the original law 99 of 1993 that created it as a fee for water use and which is now called the “mandatory inversion of the no less than 1%”. It refers to the obligation that the owner of a project using water from natural sources and which is subject to environmental licensing to invest at least 1% of the total value of its project in the recovery, preservation, surveillance or conservation of the hydrographic basin that feeds the water source from which the water is taken. Like the other compensations, it is not a fee that has to be paid to the State, but

an obligation to assign this money to eligible spending for the project owner, who can do the work itself or use a service provider.

While this scheme is generally less discussed and receive less publicity than biodiversity offsets, it generates much higher sums to be inverted in the mentioned activities, creating a strong demand for areas of conservation which promoters of environmental markets try to resolve (Fondo Acción, Fundepúblico, World Conservation Society 2016). Similarly to the other types of compensation, the plan of activities has to be approved by the environmental authority but, instead of measuring them through a number of trees or an area, it focuses on the money inverted. Modes of calculation of the amount represented by the “1%” evolved over the years, both regarding the definition of the initial amount as well as the type of activities that can be eligible, and numerous litigations between environmental authorities and companies take place, since the guidelines changed regularly and make it difficult to estimate which applies to a specific project, but also because companies try to minimize the amount that should be taken into account for the calculation of the 1% and to include spending relative to activities that may not strictly be or too indirectly focused on the recuperation of the hydrographic basin or which cost-benefit relation can be contested.

4.3.3 Evolution of the compensations

The compensations may therefore relate to the use of forest, considered as an economic resource and useful for protection, to the removal of a part of from a protected area, to the loss of biodiversity and to the impact on protected species and/or their habitat. The types of compensation types have evolved in conjunction with the shift and extension of the definitions of what is the environment, how it should be understood and the modes of valuation of the described properties.

Each compensation have their own specificity in terms of how they work, the institution in charge of them and their modes of calculation, evaluation and implementation. Each of them is also independent and they can therefore possibly be cumulative, which makes that some projects might theoretically have to compensate the same area multiple times for each of the perceived regulated impact on a different “object” and in relation to the valuation processes expressed in the laws presented before.

The environmental compensation scheme for the removal of forest reserve is related to the impact of logging and considers a number of uncharacterized trees or a volume of wood. And because the forests were not defined, although they were the main object of the law, this led to allow the compensations to allow their replacement by the same number of trees, times a varying ratio, but of any species and in any place, often encouraging their logging value and thus leading to tree plantations. By contrast the current scheme of biodiversity offsetting involves the concepts of ecosystem equivalence, of no net loss of biodiversity and of ratios in terms of surface depending on the impacted ecosystems. The same forest area can therefore either be considered as a number of trees while it is now considered as well to be an ecosystem in a certain condition, or even the possibility of an ecosystem which isn't there anymore. That is what makes the authors of the 2018 manual express that this evolution “meant a breakthrough in the compensation measures approach in Colombia, from a purely reforestation vision (tree by tree), to an ecosystem vision that allows a comprehensive analysis of the impact on the attributes of the ecosystem (ecosystem by ecosystem)”. But this new vision isn't as clear as this statement may let think and, as we will see, actors work within a sort a conceptual blurriness,

specifically in relation with whether the compensation actually compensate the “losses” and with the definitions of ecosystems and their frontiers.

4.4 Origins of the Colombian biodiversity offset Manual

As stated above, the obligations for the carriers of projects subject to environmental licence to compensate their impacts on the environment existed since the implementation of environmental licensing in 1993. Nonetheless, the definitions and understandings of the environment as well as its possibility to be compensated also frame what is considered as an impact in the environmental assessments, as the chapter 5 will show. In this sense, it was finally only when compensations on biodiversity had been defined that the impacts on biodiversity became evaluated.

In 2010, the methodology related to the environmental impact assessments required to be presented by an organization to obtain an environmental licence has been updated through the Resolution 1503, and introduced the obligation of following “the methodology, criteria and procedures for the determination and calculation of compensation measures adopted by the Ministry of the Environment and Sustainable Development”¹⁰³ with regard to the design of the biodiversity offsets, methodology that was yet to be developed. To do it, an agreement¹⁰³ has been made between the ministry and The Nature Conservancy — TNC, the World Wildlife Fund — WWF and Conservation International — CI, so that these international NGOs would bring their experience of biodiversity offsets in other countries to help design a methodology suitable for Colombia. The work of the group of researchers issued from those organizations finally led to the adoption of the Manual for the Assignment of Compensations for Biodiversity Loss through the Resolution 1517 of 2012 of the Ministry of the Environment. This Manual was then updated in 2018 to address the different deficiencies that had been identified during ongoing discussions between the different actors involved, as well as to include all the different types of compensation within a single ‘manual’.

A number of studies have been done on the development of biodiversity offsets in Colombia since the publication of the first manual, and this section will provide a synthesis of those analyses, but also describe the process of development of the guidelines and the efforts made to perfect them in the subsequent years. Indeed, while Colombian offsets have largely been inspired by offsets developing elsewhere and by the work of the BBOP, it didn’t ‘naturally’ appear in Colombia nor Manual come from an automatic transposition of the preexisting guidelines to the Colombian context by technicians and bureaucrats. It was the work of a limited number of actors, pertaining to institutions with different orientations and perceiving the Colombian context and priorities in different ways, and who had to find a way to articulate them in a coherent way with what they wanted the criteria of compensations to do and how they would be applied.

I will then describe the reception of those guidelines, through its presentation in media articles, report and in the interviews that I did. Finally, I will analyse how those guidelines give a situated appreciation of the importance of biodiversity and provide modes of valuation related to its linking to the understanding of a number of characteristics of the Colombian context which justifies the choices made. Most of my analysis is

¹⁰³ Convenio de Asociación No.09 de 2008. Ministerio de Ambiente, Vivienda y Desarrollo Territorial, The Nature Conservancy, World Wildlife Fund, Conservación Internacional.

based on the 2018 Manual, but I will also refer to the 2012 version as well as to intermediate draft versions when comparisons are appropriate.

4.4.1 Justifications for the development of offsets

The introduction of the first Manual mostly describes its content and only mentions as context its relation to the concurrent National Bioersity Policy (PNGIBSE). Indeed this policy, in its part on economic development, considered a priority the “identification and assessment of the long-term economic, ecological, cultural and social costs and benefits derived from the relationship between productive activities and the maintenance of ecosystem services derived from biodiversity (compensation or trade-offs)”*, as well as reinforcing environmental impact assessments and compensations at all scales so to allow the “maintaining the resilience of social-ecological systems and the provision of ecosystem services fundamental to the quality of life”*. The resolution¹⁰⁴ which promulgated the Manual situates it within the history of environmental protections obligations, as described in the previous section, and in particular the National Constitution (obligation to plan the use of natural resources for their sustainable use), the law 99 of 1993 (biodiversity as national heritage and interest of the humanity; functions the Ministry of the Environment to define and regulate instruments to handle the environmental impacts of economic activities), as well as the law 165 of 1994 approbating the CBD (focusing on a mix of unclearly interlinked biological resources, biological diversity, natural ecosystems and habitats, populations of species and natural environments).

One agreement¹⁰⁵ concluded between MADS and WCS for the regional implementation of biodiversity offsets discussed the national political context which justified the development of offsets, and in particular the fact that

the National Development Plan 2010–2014, 'Prosperity for All', establishes environmental sustainability as one of the cross-cutting themes in the following terms: “We need a society for which environmental sustainability is a priority and a practice as an essential element of well-being and as a principle of equity with future generations.” In this sense, the objective of environmental policy during this four-year period is to guarantee the recovery and maintenance of natural capital and its ecosystemic services, as a support for economic growth and the locomotives for democratic prosperity.*

Repeating the 2012 Manual reference to the PNGIBSE, the draft version of 2015 already gave in the first sentence of its introduction a new motivation for developing offsets: “Colombia has experienced significant economic growth in recent years, which has led to an increase in environmental licence applications”*. Two paragraphs at the end of the introduction of the 2018 version further extended the context and intended reach of the offsets in Colombia, following the signature of the Peace Agreements (even if they are not mentioned). The development of biodiversity offsets in Colombia, they note with emphasis, “join the efforts of the Colombian State to build a stable and lasting peace, promoting responsible action on the part of project proponents and executors”*. The compensations are also hoped to become an instrument generating trust in the society with regard to the development of projects, and in particular trust in the environmental authority

¹⁰⁴ MADS, Resolution 1517 of 2012, Por la cual se adopta el Manual para la Asignación de Compensaciones por Pérdida de Biodiversidad.

¹⁰⁵ Agreement of association 154 concluded between MADS and WCS in 2013.

that should be seen as the “guarantor of compliance of the obligations” to follow the mitigation hierarchy and compensate as necessary. They also want to incentivise “the appropriate use of land according to its suitability in compliance with the social and ecological function of property, closing the gap between the countryside and the city and creating conditions of well-being and good living for the rural population”*, as well as to promote “balanced alternatives between environment and well-being”* based on the participation of the communities and sustainable development. Therefore, while the first Manual situated itself in the continuation of previous legislations and national biodiversity plans, the second Manual was more ambitious by also drawing a line toward the future, using words like “construction”, “promotion”, “incentives” and expressing hopes to become and to create conditions, similarly to a political program in which offsets could play a key role, leading to peace, trust and well-being.

Following a type of reasoning already evidenced in the previous chapters (in particular relatively to the consequences of the term biodiversity, the work of the IPBES, and the development of offsets), people from different organizations, with sometimes opposed perspectives, agree on the principle that a responsibility emerges from the rich biodiversity that can be found in Colombia, translating to (or considered that it should translate to) a “responsibility to care for and safeguard that immense wealth from the negative impacts of economic development”* (Murcia et al. 2017). Since this richness is proclaimed in comparison with the one of other countries, this responsibility is also toward the rest of the world. The difference for the promoters of offsets is how they present it as an expression of this responsibility, like when the director of TNC in Colombia expresses during the launch event of the compensations Manual that “Colombia being one of the most biodiverse countries in the world, it is a great responsibility and this offset system responds to that responsibility”*. Elsewhere, in the work of a law student, it can be read that compensations remedy to a previous situation in which the destruction of an ecosystem by a company during the development of its project was due to a faulty legislation which wasn’t assigning the responsibility of the destruction to those causing it (Poveda 2016). With regard to compensations, the concept of responsibility is therefore used in multiple and often ambiguously ways which do not always allow understanding whose responsibility is addressed and in relation to what.

The idea of specifying guidelines for compensations also emerged because, as some of my interviewees expressed to me, of the wide discrepancy that was observed in the ways different public servants would assign compensation to different projects, which were considered too subjective and arbitrary, causing uncertainty both for the environmental outcome and for the companies that did not know in advance what their fate would be and which thus suffered ‘juridical insecurity’. This was also one of the points of the discourse that the Minister of the Environment gave for the launch of the Manual in 2012¹⁰⁶, and in which he called for a clearer vision and rules on how what he called “social economic activities” can avoid and offset their impacts. Because, he said, “with today’s rules of the game, entrepreneurs are subject to the interpretations that are made throughout the environmental impact assessment and licensing processes”*, and this generates uncertainty for companies. And this is said to be resolved with the Manual, which is “of objective use”*. This problem, which is further analysed in Chapter 7 of this dissertation, was also summarized in a 2012 project of law updating the

¹⁰⁶ Speech by the Minister for the Environment on the launch of the Manual para la Asignación de Compensaciones por pérdida de Biodiversidad, 2 August 2012.
<https://www.youtube.com/watch?v=uMrhmJMZVDC>

Natural Resources Code¹⁰⁷, and which was taking as a basis the “urgent need to systematize the dispersed, confusing, contradictory and numerous environmental regulations that generate as a result a socio-environmental impact, given that the country’s natural wealth and environmental heritage is undermined by leaving the interpretative mission of each regulation to the free discretion of the civil servant”*.

An employee of the ANLA confirmed their experience of the variability of the forest compensations that were assigned to companies, with consequences both at the ecological level and in terms of juridical security, and the necessity for the environmental authority also to better know what should be expected in order to better control it:

Antes del 2012 no existía entonces estos valores, que eran muy cambiantes y dependían del evaluador en particular. Por ejemplo tú cortabas dos árboles y te decía: “por cada árbol me tiene que entregar cinco”; otro te decía “me tiene que entregar dos”; yo te decía: “especies nativas”; otro te decía: “puede ser una especie comercial que no necesariamente sea nativo”. O sea este tipo de obligaciones de atrás que son bien difíciles de controlar pues porque están establecidas de manera muy arbitraria y digamos que en parte yo creo que fue digamos lo que motivó la necesidad de establecer unos factores de compensación claros. (...) Y también da más seguridad para las personas que hacen las intervenciones, o sea lo que efectivamente es, o que entiendo que es, cuáles son las normas de juego para intervenir una cobertura. (ANLA1)

In other interviews, I’ve been told that a big problem of the previous compensations were also their total lack of effectivity, and that too many of them were not even possible to find: “there is no way to find them even if they are geo-positioned, they are lost in space and time; I believe that this had already been sufficiently diagnosed in the ministry”* (Humboldt1).

The manual is therefore seen by some actors, for example here in a paper written by an ex-minister of the environment and a specialist in environmental markets and titled *Hidrocarburos y compensaciones por pérdida de biodiversidad: oportunidad para el desarrollo sostenible*, with enthusiasm as “a breakthrough in the standardization of the calculation of how much, where and how to compensate”* (Soto and Sarmiento 2014), a standardization which is also the countrywide standardization of the value of a specific ‘type’ of ecosystem (see below for the analysis of the modes of valuation) and of the ways to generate ‘gains’. The TNC authors of the Manual were also rejoicing, in a scientific paper published soon after that, “for the first time, companies will be required to compensate for impacts to biodiversity in accordance with an explicit science-based framework” (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013a).

Next chapter will show that this regulation through standardization may be seen as being beneficial but also problematic at an administrative level, according to employees of the environmental authority who may sometimes perceive it as counterproductive or even as having perverse effects from an ecological point of view.

a) Offsets and protected areas

The relation between offsets and protected areas is quite complex. As expressed in the previous chapter, some academics (Evangelia Apostolopoulou and Adams 2015; Büscher, Dressler, and Fletcher 2014) fear that

¹⁰⁷ Camara de representantes, 2012 proyecto de ley, “por el cual se expide el código de los recursos naturales y ambientales de Colombia”.

offsets may not come on top of other conservation efforts and investments, but that they would gradually replace them, fostering the disengagement of the State. Indeed, the Minister of the environment was seeing in the financial resources produced by offsets as great way to remedy to the “financial unsustainability”, and more generally to the lack of funds, of the national parks’ network, and in particular he wished to them used to buy the land still occupied by campesinos. This was also suggested by a BIOFIN (the UN Environment branch dedicated to biodiversity finance) communication on Colombia, in which they considered offsets as a way to fill some of the Colombian conservation financial gap:

BIOFIN in Colombia is supporting the strengthening of key biodiversity financial solutions. These include biodiversity offsets where the private sector pays for practices or activities where it impacts on the nature or the benefits of a protected area, for example. BIOFIN found that compensation from the private sector could be as high as USD 214 million. This solution alone could pave the way to covering a significant proportion of the financial gap for biodiversity in the country which is estimated at USD 1,44 billion¹⁰⁸.

While it may or may not have caused the reduction of the State inversion, an employee of the ANLA gave me the example of an oil exploration project which was projecting to have to compensate 1200 hectares in an area where Parques Nacionales, the Colombian institution managing national parks, wanted to create a new protected area. They therefore met with the company and tried to convince the ANLA to make them have to buy the land necessary for the park as a means of compensation of the areas impacted by the oil wells. But later, as one ANLA employee recounted me, the company declared that the preliminary exploration hadn’t been so successful and that they wouldn’t dig the majority of the wells, so the compensation would be of 100 hectares only, leaving the representatives of National Parks appalled:

Parques Nacionales estaba super aterrado, que como podía pasar... Pero eso es lo que pasa en la vida real, porque si el señor de verdad no le va a dar, para que va a seguir abriendo huecos? Pero Parques Nacionales hubiera querido que llenara eso de huecos para que pagara sus mil y pico de hectáreas. Es que, y para poder declarar un área protegida... Es que son las locuras de este país, este sistema de licenciamiento que funciona así. (ANLA1)

Another issue was the possible use of offsets to extend protected areas and reach national and international targets like the Aichi target 11 focused on the expansion of protected areas, considered to generate a trade-off between conservation and development (Buschke, Brownlie, and Manuel 2017), or even to be a plain misuse of offsets¹⁰⁹ (Maron, Gordon, et al. 2015a). This didn’t seem to be the case in Colombia, who intended to reach this particular target by the extension, only on paper as would say its critics, of the Chiribiquete National Park (but they still failed due to the lack of representativity and connectivity¹¹⁰), and the Decree 1625 of 2016 even proscribed the certification of greenhouse gas capture and reduction from activities related to compensation obligations. But even if compensations are not used to reach these targets, they are clearly in the discourses of

¹⁰⁸ Peace, Green Development and Climate Change: A triple pronged approach to finance for nature in Colombia. Julia Queiroz and James Maiden, 31 October 2017.

<http://www.biodiversityfinance.org/news-and-media/peace-green-development-and-climate-change-triple-pronged-approach-finance-nature>

¹⁰⁹ This view may change with regard to the new proposed types of offsets, which should be aligned with national targets, as discussed in Chapter 3.

¹¹⁰ See for example <https://sostenibilidad.semana.com/medio-ambiente/articulo/colombia-no-cumple-metas-internacionales-de-areas-protégidas-deforestacion/53423>

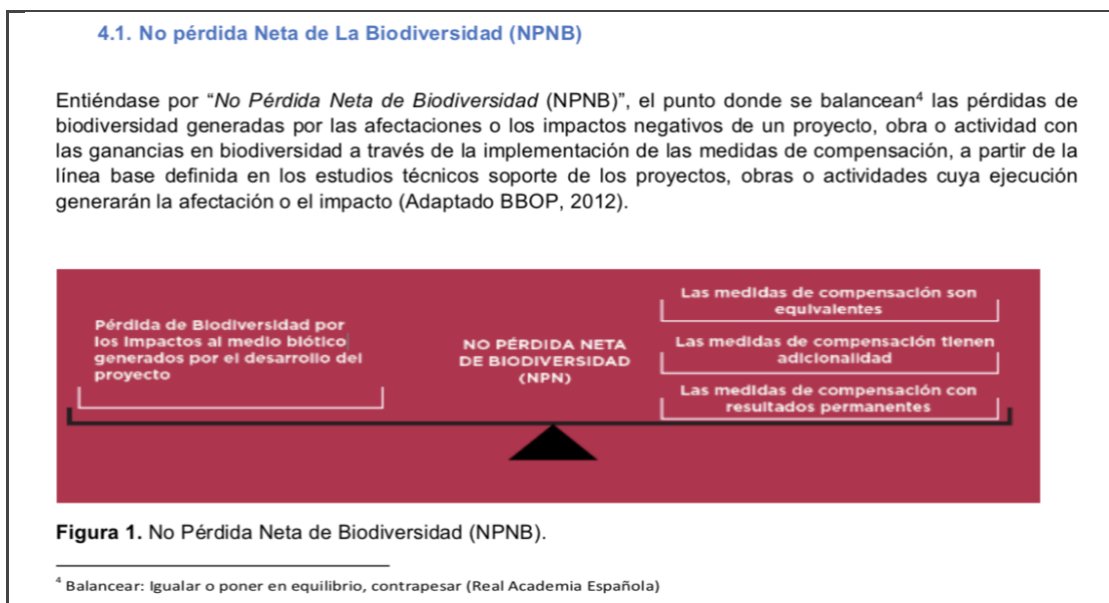
the politicians and proponents an element of wider biodiversity policies, and their “measurable and quantifiable results” have to contribute to the country’s conservation goals.

b) Development, conservation and compensations

It seems that the compensation mechanism generates a collective fascination not only because of the intellectual, ontological and technical challenges (in terms of difficulty but also for its temerity) it represents, but also by their metaphorical aspect as an embodiment and resolution of what would be the tension between development and protection of the environment. Indeed, the ecological balance that would have to be found between the two, defined in Colombia as elsewhere by the term sustainable development, is found there as a balance between destruction, linked to development, and reconstruction or preservation, that is to say a less impact versus a more impact. Internationally, many publications and videos on compensation published by governments or NGOs indeed claim that compensation offers nothing less than a new relationship between humans and the impact of its activities on nature¹¹¹.

The 2018 version of the Manual, using an iconography (see Figure 26) and conceptual framing usual for biodiversity offsets, also puts forward the fact that this type of compensation allows reaching a no net loss of biodiversity, but newly precise that it is “the point where losses (...) are balanced with gains in biodiversity”*, which seemed to have to be clarified in a footnote with the definition of the Spanish equivalent of the verb “to balance” by the Spanish Royal Academy, indicating: “To balance: To equalize or bring into equilibrium, to counterweigh”*.

Figure 26: Extract from the compensation Manual of 2018 on the definition and representation of the no net loss of biodiversity.



¹¹¹ Numerous videos are produced about specific projects, but animations are also made so to explain the general concepts behind the compensations, and they are not only interesting with regard to the way they explain them and put them in the context of the transformations of the relation between humans and nature, but also because of the way they often use a kind of video game aesthetics of splitting the landscape into squares rendered with an isometric projection. While this is to make easier their explanations, it also simplifies the landscape and the nature that is represented, in accord with the compensations. See for example *Compensación Ambiental: Una oportunidad para todos*, WCS Peru, 2014 www.youtube.com/watch?v=FnKAND32Uis or *Compensaciones por pérdida de biodiversidad*, Fondo Acción, 2017 www.youtube.com/watch?v=moDc_0mNPT4.

Elsewhere, the Ministry and the ANLA are also regularly using the classical bar chart with the different steps of the mitigation hierarchy, showing that biodiversity impacts are negative and compensation positive, and that they cancel each other out at the level of the “zero impact” line, or even above in the case of a net gain. But a presentation of the compensations by the ANLA¹¹² of 2014 conceptually sketched the compensations (see Figure 27) in a more original way, showing the different possibilities of actions and goals as resulting in a position along a gradient that can be imagined (it is not explicitly said) as representing the biodiversity outcome. While the common bar chart shows actions as separate but still referring to a line of reference representing the zero, here the representation is done through a totalizing continuum of a biodiversity that, despite its intrinsic diversity, can be understood as wholly commensurable through space, time and scales.

Figure 27: Slide extracted from a 2014 presentation of the biodiversity offsets by the ANLA.



For a biologist at the Humboldt Institute and a specialist in biodiversity offsets, their emergence embodies the new “paradigm” that is the Anthropocene, which both makes them necessary and also allows them, even if their conceptualization at the international level is prior to it:

Ya no hay un planeta original prístino, sino hay un planeta con gente que requiere ya no regresar a las condiciones originales que tuvo en el Pleistoceno, sino tener unas condiciones de resiliencia que asegure que podamos estar todos. Entonces estamos como sobre esa línea y nuestra principal apuesta con este nueva línea de investigación es meternos a compensaciones ambientales que pensamos es una muy buena herramienta para lograr esos balances. (Humboldt1)

According to this interviewee, in this new paradigm development and well-being are no longer opposed and separated from the preservation of the environment, and compensation is one of the instruments, and the strongest symbolically, of their reunification, reconciliation or compatibilization¹¹³. They then become not only

¹¹² ANLA, Coordinación de agroquímicos, proyectos especiales, compensaciones e inversión 1%, May 2014, Powerpoint presentation on ‘the Manual para la asignación de compensaciones por pérdida de biodiversidad’.

¹¹³ I chose this word to express the activity of rendering compatible, but Wikipedia indicates that it is mainly (only?) used in the domain of polymer chemistry to designate the “addition of a substance to an immiscible blend of polymers that will increase their stability”. Interestingly, the increase of stability is therefore not reached through the transformation of one

the next step and the final touch in the licensing process, but also a reconfiguration of the balance it intended to provide. Figure 28 shows the same interviewee during a webinar on compensations in 2020¹¹⁴; it wasn't said whether the image was supposed to represent the Anthropocene, but it certainly evokes the resurgence of life in the capitalists ruins described by Anna Tsing (2015).

Figure 28: Screenshot of the representation of the shift in paradigms by the Humboldt Institute employee during an online seminar.



For the director of the ANLA, an institution which aims at embodying sustainable development as we will see in the next chapter, the compensations also serve as a reframing instrument, in order to reach their “objective as an authority, we must not only give licences but achieve sustainable development of the country, it is the opportunity to remove the potential conflict that many want to pose as a contradiction between environment and development”^{115*}. But for authors analysing the expansion of neoliberal conservation (Arsel and Büscher 2012), this transformation through the reframing in non-oppositional terms might also happen through putting into coherence the two, so that biodiversity conservation and extractivism may become “two sides of the same coin” (Klier and Folguera 2017).

4.4.2 Process of elaboration of the Manual

The 2012 Manual has been elaborated through the collaboration of a handful of people from the MADS, the ANLA and TNC, within an editorial committee. But the only institution whose personal is referred to as

of the two components that are intended to be blent, but by adding a third one, often a copolymer which is made of the two components to be blended. As such, the compensation could be considered as being inseparable from the compatibilization of conservation and development.

¹¹⁴ Ecoexplora Consultoría, Importancia de las Compensaciones Ambientales en Colombia - Sesión 1, Virtual training, 27 April 2020.

<https://www.youtube.com/watch?v=6xGCexbR7Ug>

¹¹⁵ ANLA, 2 August 2012, Cuanto y Donde Compensar.

<http://portal.anla.gov.co/noticias/cuanto-y-donde-compensar-metodologia-compensaciones-perdida-biodiversidad>

“authors” is TNC, while people from the MADS and the ANLA are referred to as “technical staff”. Thanks are then given to some institutions (including WWF and CI) for their “institutional contribution”, as well as to some experts, including one from the World Bank, five from BBOP and four also working for TNC but outside Colombia.

Although only people from TNC are credited as being authors, in the interview I have been able to perceive a tension regarding the individual attribution of authorship of the Manual, as some people from TNC were annoyed at a person that was working at the time for MADS and who, according to them, was too often wrongfully claiming that they wrote it. While this controversy is somewhat anecdotal, it shows how the writing of the Manual is also linked to particular individuals and to the relation that they established together.

From the point of view of the MADS the Manual isn't only the product of TNC, and since they asked for feedback on their first draft to numerous academics, companies, and others, they had to take all those contributions into account as well. But an author of the Manual from TNC, at the end of our discussion, told me that, although they had done a lot of those workshops, in the end they were afraid of getting stuck and not being able to finalize it, since many people wanted different things, and that they finally decided to isolate themselves, to stop the consultation process, and to make more unilateral decisions and really decide what the form of the manual would be, without really taking into account everything that everyone wanted because it was impossible to satisfy everyone.

The 2009 agreement for the development of the manual was followed by a number of others, associating public and private organizations for the study or improvement of particular aspects of the compensations and their implementation process. Without the intention of providing an exhaustive list of those agreements, showing their number, focus and participants allow understanding their importance in the development of the Colombian offsets policies as well as the successive intentions of development. The agreement of association 154 concluded between MADS and WCS in 2013 aimed at the formulation and implementation of the Manual of Compensations at a regional level through the CARs for the projects they are in charge of licensing. The municipality of Cali contracted TNC¹¹⁶, because of its “experience and suitability”, in 2013 to work on their protected areas with the goal of implementing a scheme of compensation for ecosystem services to protect their water sources. In 2014, the public Marine Institute INVEMAR associated itself with TNC¹¹⁷ for the elaboration of a methodology for the implementation and the quantification of marine biodiversity offsets. In 2018, the Humboldt Institute associated itself with TNC¹¹⁸ to design a system of tracking and monitoring to enable the evaluation of the effectiveness of the implementation of the compensations (see at the end of this chapter).

ACTORS INVOLVED IN THE DEVELOPMENT OF OFFSETS IN COLOMBIA

According to a report of the CBD¹¹⁹, the agreement between the Ministry of the Environment and NGOs for developing the Colombian biodiversity guidelines represents a success of the synergy created by the

¹¹⁶ Convenio de asociación numero 4133.0270.12-2013 suscrito entre el municipio de Santiago de Cali - departamento administrativo de gestion del medio ambiente -DAGMA y la fundación the Nature Conservancy.

¹¹⁷ Convenio especial de cooperación No. 001-14 suscrito entre el Instituto de Investigaciones Marinas y Costeras “José Benito Vives De Andrés” –Invemar y The Nature Conservancy. INVEMAR. PRY-BEM001-014-IFP. Julio de 2014.

¹¹⁸ Convenio NASCA 00032/2018 (18-070).

¹¹⁹ CBD, Resource Mobilization Information Digest No 169, Sectoral and Cross-Sectoral Integration of Biodiversity in Colombia, February 2013.

national implementation of the CBD and related conventions. In particular, they explain, the Decision IX/26 promoting business engagement presented priority actions for the years 2008–2010, which included a recommendation to work with organizations, like the Business and Biodiversity Offsets Program (BBOP), to do case studies, develop methodologies and see how they can fit within national policies. They say that in response the BBOP developed their recommended “best practices”, and that Colombia decided to develop their offsets with the help of international NGOs.

I haven’t been able to consult the agreement of 2008 which aim at developing the biodiversity offset guidelines, but another one made in 2013 between MADS and WCS¹²⁰ (which also participated in the development of the first manual) for the training of regional authorities in the theme of biodiversity offsetting was detailing the characteristics of WCS for which it had been chosen as a partner, helping to understand some of the reasons why international NGOs are contracted by governments to help them design their compensation policies. Besides its long history, and presence in more than 60 countries, WCS is said to have been chosen because of its experience to work with governments (they cite as examples “Colombia, Peru and Chile, and several countries in Africa and Asia”) to help them ensure a no net loss of biodiversity through the development of tools, norms, requirements, systems and metrics, in ways that seem close to turnkey solutions. They thus express that “a través de la experiencia en planificación y evaluaciones ambientales estratégicas, WCS ofrece soluciones óptimas para las decisiones sobre el uso y la planificación del territorio” (it is not clear if the text is a copy and paste from a WCS brochure or a description made by the Colombian government). The document also puts forward the specific experience of WCS with biodiversity offsets, including the design of robust compensation plans meeting the IFC and BBOP standards and that can “achieve or approach the concept of no net loss of biodiversity”*, and organized with the BBOP workshops funded by the World Bank on offsetting in Latin America.

One notable absence from the participating institutions in the supervision of the redaction of the Manual is the Institute Humboldt, the main public institution working and researching on all themes related to biodiversity. Members of the institute did participate in the workshops, but it seems that the institute was considered as lacking experience in the area of compensations, and that its involvement in the design of policies involving companies wasn’t always considered appropriate:

Eso lo discutimos mucho porque desde el instituto no es claro porque el ministerio le pone recursos primero a una ONG que ha sus propios socios, y en últimas no sabemos porque. Es que el instituto no tenía tradición en eso (...), no había experticia en el instituto, el instituto no se había querido meter en esa interfase política-ciencia, pero una vez entró y manifestó su interés entonces ya fuimos convocados permanentemente y cada vez han estado poniendo ya más recursos desde el ministerio directamente a este órgano. (Humboldt1)

On the other hand, TNC was not only very much involved in the theme of compensations, contributing in particular to the work of the BBOP, but was also very proactive in trying, directly or indirectly, to convince governments to adopt them. For Calvet et al. (2015), NGOs such as TNC or CI boosted the development and diffusion of biodiversity offsets approaches, and were particularly interested in expanding the use of market-based approaches to biodiversity. They actually share a specific vision of conservation aimed at promoting ‘new ways of approaching environmental problem solving’ and fostering instruments ‘outcome-based, financially sustainable and compatible with economic development’”, as the TNC website was claiming.

¹²⁰ Agreement of association 154 concluded between MADS and WCS in 2013.

The role of the largest environmental NGOs is often questioned or openly critiqued internationally, like in a bulletin of the World Rainforest Movement (2019) which considered that they work alongside companies for the neoliberalisation of nature, from which they largely benefit, including working for the companies to implement their compensation plans. In Colombia, some opposition is also occasionally voiced, and with regard to their implication on the development of compensation, a blog article¹²¹ on the website of the newspaper El Espectador, was lamenting the funding of international NGOs, which may have conflicts of interests due to their collaborations with multinational companies, while noting the exclusion of the biodiversity specialists from national institutes and universities.

Conservation International, at the moment it was taking part in the development of the Colombian guidelines in collaboration with TNC and the MADS, was also working with its ‘corporate partners’ (in Colombia as well as in a number of other countries) to design their compensations. It collaborated for example with Carbones del Cerrejón, owner of the largest coal mine of Colombia, on plans based on the economic valuation of ecosystem services, as well as with AngloGold Ashanti for the development of a model of compensation for water ecosystem services, preceding (and possibly influencing) the Manual for freshwater compensations of the Ministry.

For a worker of TNC who was previously working the Humboldt on the relation between companies and biodiversity, the idea was “to explore the relationship between the productive industry and biodiversity, and see how companies or the productive sector can favour biodiversity if they plan their projects well and comply with certain standards, certain levels of quality and early planning, in order to be able to ensure the sustainable use of biodiversity and not affect the territories where they operate”*. Sustainable ‘use’ therefore rely in this view on planification, standards and levels of quality, that is on a managerial view of biodiversity conservation.

Apart from companies’ personnel, the group of people working in Bogotá specializing in these issues is in the end relatively limited, as one of the specialists on this topic at the ANLA, the environmental authority responsible for assessing compensation, told me during our discussion:

- O sea, conoces a [X], conoces a [Y], me conoces a mí, conoces a alguien del ministerio, ya conociste a todos los que... que pelean, los que nos vemos en los mismos espacios hablando de la misma pendejada... O sea, este gremio es muy chiquito.
- Con puntos de vista igual o diferentes ?
- Pues cada uno desde su orilla, es que... porque como cada uno tiene un rol diferente o sea, no es lo mismo estar en un instituto... y yo con [X del Humboldt] siempre se lo digo: “oiga, es que es muy fácil decir la no pérdida neta de biodiversidad, compruébenmelo, venga y me la comprueba y me la pones aquí porque yo no lo he visto, y llevo dos años aquí revisándola, no la veo, no existe”. La no pérdida neta de biodiversidad, o sea es un balance que a mí no me da, en la vida real eso no..., no funciona así.

While the person quoted mentions only four people, the number of those who got involved is actually quite higher (and I will come back later to the question of no net loss which is raised in this excerpt), but it gives an idea of how well the members of this group feel they know everyone, and it also gives an idea of the

¹²¹ Yolima Vargas Garzón, 12 Jun 2013, Conspirando por un mundo mejor: Organismos privados, autores de política colombiana de “compensación por pérdida de biodiversidad”, Blogs El Espectador. <http://blogs.elespectador.com/actualidad/conspirando-por-un-mundo-mejor/665-2>

differences in perspectives according to each person's role. But besides being not such a big group, with people from a limited number of organizations and which meets regularly during workshops, and the fact that they almost all have a background in biology, there is also a significant circulation of these persons between the organizations, including between the public to the private and back. While I chose not to do an extensive analysis of this circulation, its relevance was illustrated to me during an interview with a person who had themselves renounced from a job at the Institute Humboldt, because a new director wasn't so interested to pursue the work that had been initiated on the question of the relations between business and biodiversity, to continue to work on it at TNC:

Desde el 2009 TNC empezó a apoyar al Ministerio para pensar una política de compensaciones más estructurada no había una política clara en el tema de compensaciones, entonces desde el 2009 empezó a darse la discusión y a pensar cual sería el mejor mecanismo de creación de ese manual de compensaciones. Ahí entró GIZ [Gesellschaft für Internationale Zusammenarbeit, a Deutsch environmental NGO] que fue creo la líder del proceso en esa época, también ha sido mucho por temas de personas por qué la viceministra que estaba en el 2012 más o menos en el Ministerio liderando el tema de compensaciones después pasó a ser directora de Colombia aquí en TNC y la chica que trabajaba aquí en TNC en el tema de compensaciones se fue a GIZ a trabajar allá entonces como que ha habido siempre como las mismas personas, entonces creo que también fue mucho interés particular de gente que empezó a mover el tema y a meterle el acelerador para lograr sacar esto del manual. (TNC1)

In turn, TNC and other NGOs, through agreements with the Ministry of the Environment, happen to detach some people to go to work directly within the Ministry, as a kind of external consultant or subcontractor, as described during an interview with a person working for TNC who, to my surprise, had given me a meeting place within the Ministry's premises:

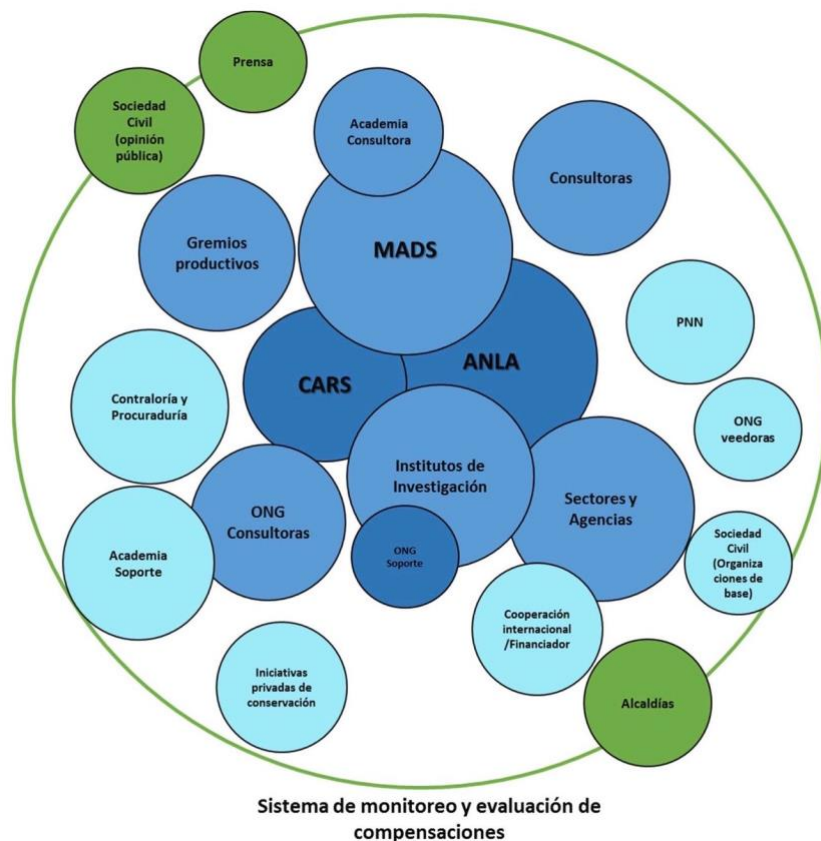
Mira, yo en este momento estoy trabajando para el Ministerio del Medio Ambiente a través de una alianza TNC – Ministerio, yo estoy financiado por TNC para el Ministerio de Ambiente, y en este momento digamos estoy a cargo de todo el tema de compensaciones aquí en el Ministerio, pero no hago parte de su estructura interna por motivos de recursos económicos. El Ministerio no tiene en este instante recursos económicos para tener un profesional encargado del tema, entonces hizo una alianza con TNC, y TNC le dice: "yo le apporto el profesional para que usted tenga digamos este soporte técnico por un tiempo X". Aquí esto es común en varios temas, sí, aquí se generan muchas alianzas para traer profesionales que el ministerio no está en capacidad de financiar por el perfil o por otra situación y las ONGs internacionales muchas veces lo que hacen es aportarle al ministerio esos profesionales y ese conocimiento técnico, es más común de lo que creemos, pasa con frecuencia. (TNC3)

Contrarily to what seems to be suggested, and on the basis of agreements between TNC and the Ministry that I've been able to consult, the services offered by the NGO usually come at a cost for the Ministry. But, while the circulation and links are very strong between some organizations, one can nonetheless emit the hypothesis that, since they also illustrate to some extent an alignment of views between them, this circulation does not extend beyond the frontier of relative homogeneity and to other groups with distinct positions. One could also wonder about the implications (which I didn't thoroughly investigate) of these circulations on the type of policy orientations chosen, since the NGOs and consultants equally work for companies to develop conservation and compensation plans that the Ministry itself, through the ANLA, will have to assess. On the other hand, even the ANLA establishes agreements (or more exactly 'intention letters' in this case) with NGOs to "realize joint activities to the benefit of the country" (including for example with the Foundation Natura

which was contracted by the owner of the controversial hydroelectric dam El Quimbo to implement its compensation activities and that the ANLA has to oversee), on the basis that “it is important to strengthen links with public and private entities that have expertise in environmental management and that seek to benefit the country and contribute to the modernization of environmental institutions”^{122*}.

For the purpose of the creation of a system of evaluation and monitoring of the effectivity of offsets in Colombia (Sistema de Evaluación y Monitoreo a la efectividad de las Compensaciones Ambientales en Colombia – SEMCA), the Humboldt Institute and TNC, who were leading the process, organized workshops with people from the MADS and the ANLA to identify all the actors related to compensations. They then published their results in their final report (Instituto Humboldt & The Nature Conservancy 2019) in the form of a diagram, reproduced in the Figure 29. While the characterization of the relations of each actor seems to have been more oriented toward the relations to the future system than to the compensations in general, it can still give a good overview of the ways actors are classified and how the part they’re playing is understood by the ones who have a hand on the process.

Figure 29: reproduction of the figure published in the SEMCA report representing the actors who have a relation with compensations. The colours represent the ‘interest’ for the system, the centrality of the actors represents their opinion, from pro to neutral, and the size of the circle represents the influence of the actor.



¹²² ANLA, Carta de intención entre la Autoridad Nacional de Licencias ambientales - ANLA y Fundación Natura, June 26th, 2019. http://portal.anla.gov.co/sites/default/files/comunicaciones/convenios/carta_natura.pdf

Regulatory public institutions are therefore considered by the authors to have both the highest interest and influence, and to be actors the most in favour (of the system, but it could be understood that it is also of the compensations). The second most interested and influential group is formed of private organizations, including consultancies (both companies or NGOs) and companies. In turn, the least interested and with the lowest influence are the town halls, the press and the civil society (strangely divided into grassroots organizations and public opinion).

It is important to note that this system of evaluation of the compensations, which will be further discussed at the end of this chapter, only includes ecological indicators, since it is said to be a “proxy for the no net loss of biodiversity”, and uses for this a definition of biodiversity which doesn’t include human or socioecosystem diversity (even if, as indicated in the previous chapter, even the BBOP had the ambition, at least expressed, to include them in the biodiversity offsets accounting). This is somehow reflected in the classification the authors proposed of the actors, which include the ‘involved actors’, that is the companies, the interested actors, that is the MADS and the environmental authorities, and finally the ‘general public’, which include all the rest, with the press and civil society coming last. It could therefore be argued that the problem of offset effectivity is constructed as mostly an inter-institutional technical issue, which isn’t or shouldn’t be of concern for the people living in the impacted or compensated areas.

The formation of a community of interest around the development of the Colombian biodiversity offsets policy and the ongoing discussions on the lessons of pilot projects, the difficulties and bottlenecks, the things that should be improved from the point of view of some actors, points toward the importance of this network of actors mobilizing around it and that has been referred to as an instrument constituency. In this sense, Simons and Voss (2018) argue that “policy instruments are not only ‘active’ because they contain scripts for reordering society but also because they gather a constituency comprised of practices and actors oriented toward developing, maintaining and expanding a specific instrumental model of governing”.

Jointly to the mobilization around offsets is the constitution of an epistemic community, sharing expertise and authority on the definition of a policy problem. This community, with expert knowledge which puts them in a privileged position, then crucially influences “the cause-and-effect relationships of complex problems, helping states identify their interests, framing the issues for collective debate, proposing specific policies, and identifying salient points for negotiation” (Haas 1992). They thus also have a hold over the processes aiming at rendering coherent the relation between knowledges and convictions. This constitution of a weak established group around an instrument may then leads to the premature closure of the discussions through the generation of a ‘false consensus’ (Turnhout 2018), acting the performative acknowledgement of the ‘false dichotomy’ between business-as-usual and biodiversity offsets (Curran et al. 2015).

4.5 Analysis of the Manual and evolution of the determining criteria of biodiversity

The manual of biodiversity offsets has been designed and written didactically following what has been considered to be the questions forming the basic pieces of the offsetting process: the “what” should be compensated, “how much”, “where” and “how”. Each of these questions has been discussed and framed in a

specific way, the same organization is followed by companies in their compensation plans in which they justify the choices they make on the basis of different types of information. Some of the choices that were made by the group of people who had to design the manual for Colombia are relatively original by comparison to what is used in other countries. They were made according to what they considered to be the Colombian context, both in terms of biodiversity and in political and social terms, but also through compromises with the different actors as well as among different possibilities which were considered to express a number of trade-offs.

Since those essential questions were at the basis of the reflections of a number of actors that I met, I also used this frame in the interviews that I did with the individuals who worked on the development of the manual or those that are using it. But beyond questions strictly on the development of the Manuals, I intended to also widen the scope of the discussions toward questions related to the understanding of: the current and historical biodiversity state, dynamics and challenges in Colombia; the role that compensations have or should have within these evolutions; the role and positions that the interviewee had and has in the process of development of compensations; the different individual or institutional actors that were involved and their respective roles; and the diverse problems and difficulties that they see in the current compensation scheme.

Since the 2012 Manual has been updated in 2018, and this offers a good opportunity to see the relation between the issues that had been identified in the first version and the proposed solutions for its evolution. I found an unofficial intermediate version dating from 2015 but, unfortunately, I haven't been able to find any draft document previous to the 2012 official version, limiting the possibilities to study its crafting process to the analysis of the interviews that I did. Beyond this, I've also been able to find numerous articles, papers and reports produced by newspapers, institutions, researchers and NGOs that were presenting, analysing or critiquing the Manuals or their implementation, sometimes suggesting ways forward.

The interviews and documents were used here to analyse how each of the questions of the Manual has been framed and debated, specifically but also in relation with a particular understand of the context in which they were designed, and how each of the choices informs the modes of valuation that were intended to be embedded in a dispositif with many institutional, technical and legal ramifications. On this basis, the analysis of the manual in this section will be focused on the ways the specific "technical" choices have emerged and their relation to the description and modes of valuation of the biodiversity that is the object of the compensation. I will therefore present here the particularities of the manual (particularly of the second one) at a theoretical level, and then show how the guidelines are understood and applied in practice by different actors in the following chapters.

Of course, and as described in the previous chapter, in critical terms offsets can be considered as a political project of ontological transformation of nature, and that entering and discussing the specificities of an offset policy could be considered as a 'trap', since it would depoliticize them. Nonetheless, I would argue that even in a framing stating that offsets are a important and legitimate tool (obviously for certain ends that are themselves put into coherence with the means, that is somewhat redefined by them), the actors involved in the process of definition of 'technical' choices and, as we will see in the next chapter, in implementing them, are confronted with problems, dilemmas and difficulties that they can only resolve by putting them, often through concrete or virtual collective deliberation, in relation with ethical preoccupations, thus allowing a hierarchization of the different issues that they face. In turn, focusing on the emergence of these issues and of their modes of resolution, can allow to meaningfully grasp how, within the context of offsetting, relations between knowledge and ethics are processually redefined.

4.5.1 What are the offsets said to compensate: a problem of definitions?

To understand the meaning of compensations, one should first focus what the Colombians compensation laws call the ‘what’ to compensate, which should be considered as related to the ‘why’ it should be compensated, even if this is generally not made explicit in the documents related to compensation.

Table 11: Comparison of the definitions of biodiversity loss in the successive Manuals.

	Manual 2012	Manual 2014 (draft)	Manual 2015 (draft)	Manual 2018
Biodiversity Loss	La pérdida de biodiversidad se presenta cuando por procesos de transformación y degradación del paisaje, el tipo, el tamaño, el contexto paisajístico y la riqueza de los elementos de la biodiversidad es perturbada y disminuida y, se inician procesos de pérdida y extinción local o regional	La pérdida de biodiversidad se presenta cuando por procesos de transformación y degradación del paisaje, el tipo, el tamaño, la composición, estructura y función de la biodiversidad, el contexto paisajístico y las funciones ecológicas son perturbadas y disminuidas y, se inician procesos de pérdida y extinción local o regional.	La pérdida de biodiversidad se presenta cuando por procesos de transformación y degradación del paisaje, el tipo, el tamaño, la composición, la condición, el contexto paisajístico y la funcionalidad ecológica de los elementos de la biodiversidad es perturbada y disminuida y, se inician procesos de pérdida y extinción local o regional.	La pérdida de biodiversidad se presenta a partir de eventos de perturbación, fragmentación, transformación o degradación del paisaje, generando cambios en el tipo, tamaño, composición, estructura y función de los ecosistemas.
Biodiversity Loss (simplified)	procesos de transformación y degradación del paisaje -> el tipo, el tamaño, el contexto paisajístico y la riqueza de los elementos de la biodiversidad es perturbada y disminuida -> se inician procesos de pérdida y extinción local o regional	procesos de transformación y degradación del paisaje -> el tipo, el tamaño, la composición, estructura y función de la biodiversidad, el contexto paisajístico y las funciones ecológicas son perturbadas y disminuida -> se inician procesos de pérdida y extinción local o regional.	procesos de transformación y degradación del paisaje -> el tipo, el tamaño, la composición, la condición , el contexto paisajístico y la funcionalidad ecológica de los elementos de la biodiversidad es perturbada y disminuida -> se inician procesos de pérdida y extinción local o regional.	eventos de perturbación, fragmentación, transformación o degradación del paisaje -> generando cambios en el tipo, tamaño, composición, estructura y función de los ecosistemas .
Focus	paisaje + elementos de la biodiversidad	paisaje + biodiversidad (+funciones ecológicas)	paisaje + elementos de la biodiversidad (+funcionalidad ecológica)	paisaje + ecosistemas
Transformation type	processos + procesos	processos + procesos	processos + procesos	eventos + cambios

While the idea is not to make an extensive comparison of the 2012 Manual and the 2018 Manual, pointing a number of differences can help perceive the dynamism in the evolution of understanding of the context,

definitions and methods linked to compensations. Indeed, it is interesting to see how, even in a document which is not supposed to be theoretical nor a place to forge ecological concepts, the definitions used to describe the most fundamental aspects of the ‘instrument’ (which would be in this case beneficial to understand as a *dispositif*) are unstable, or not succeed in stabilizing. This is for example the case of the definition of biodiversity loss, as shown in the Table 11. Here also the purpose is not to do an extensive in-depth analysis of the diverse implications of the definitions and their transformations, but to give an idea of these transformations, and how they relate to a difficulty of apprehension and description of the meaning of biodiversity loss.

In theory, the compensations compensate the loss of biodiversity. They therefore have to define biodiversity, through a manageable set of criteria used to characterize it, and to define a loss. Interestingly, it can be noted that the Manual 2018 defines the loss of biodiversity without referring to biodiversity but only ecosystems, contrarily to the previous definitions. Differences are also evident in the focus of those definitions (what changes successively) and the type of transformation retained.

As all those definitions try to find the most accurate characteristics to take into account for their purpose, as we will see in greater details in the next chapter, the losses of biodiversity due to projects on the land (by opposition to marine environments) are generally simply considered to be total for the areas of direct intervention and therefore simply calculated in terms of area (e.g. 2 hectares lost that have to be compensated). More complex problems may actually emerge when shifting scales and taking into account indirect impacts, connectivity and fauna, and the most challenging metrological issues are related to the measurement of gains. While not focusing specifically on the concept of landscape, I will analyse the centrality of scale issues in the Chapter 8, in particular with regard to the consideration of environmental impacts.

The following Table 12 shows other differences in the definitions of key concepts between the two official versions of the Manual.

Table 12: comparison of definitions between successive Manuals.

	Manual 2012	Manual 2018
No net loss	La no pérdida neta de biodiversidad se refiere a la compensación de la biodiversidad que es diseñada y ejecutada para alcanzar resultados de conservación en situ medibles, que de manera razonable pueda esperarse que darán lugar a la no perdida neta (BBOP, 2012).	Entiéndase por “No Pérdida Neta de Biodiversidad (NPNB)”, el punto donde se balancean las pérdidas de biodiversidad generadas por las afectaciones o los impactos negativos de un proyecto, obra o actividad con las ganancias en biodiversidad a través de la implementación de las medidas de compensación, a partir de la línea base definida en los estudios técnicos soporte de los proyectos, obras o actividades cuya ejecución generarán la afectación o el impacto (Adaptado BBOP, 2012).
net loss or net gain	Medidas de compensación: (...) conservación efectiva de un área ecológicamente equivalente donde se logre generar una estrategia de conservación permanente y/o su restauración ecológica, a fin de que al comparar con la línea base se garantice la no pérdida neta de biodiversidad.	La pérdida o ganancia neta está referida a los resultados obtenidos en el área en la que se implementan las medidas de compensación, respecto a un ecosistema de referencia o en áreas contiguas que generen conectividad entre ecosistemas complementarios desde un análisis ecológico del paisaje
ecosystemic equivalency	(not defined, comps based on ecological equivalence. Other relevant parameters:)	mismo tipo de ecosistema de referencia, es decir, el área del ecosistema presente en la unidad

	mismo tipo de ecosistema natural afectado; igual o mayor condición y contexto paisajístico; igual o mayor riqueza de especies.	biótica donde se pretende realizar el proyecto en términos de atributos y condiciones ecosistémicas
ecological equivalency	áreas de ecosistemas naturales y/o vegetación secundaria que mantienen especies y comunidades similares (...) y que tienen una viabilidad ecológica similar por área, condición y contexto paisajístico.	Idem, or: un área que mantiene atributos ecológicos similares o mejores al área impactada relacionados con: tipo de ecosistema, tamaño del área impactada, composición de especies, estructura de la vegetación y del paisaje.
Ecosystem	complejo dinámico de comunidades vegetales, animales y de microorganismos y su medio no viviente que interactúan como una unidad funcional. Artículo 2 de la Ley 165 de 1994.	idem

4.5.2 Design of the compensation factor: what matters in ecosystems valuation

The part of the Manual focusing on “how much to compensate” is particularly interesting for the intended analysis, since it allows us to see how the values of each of the ecosystem types have been considered, in order to assign them a specific compensation multiplier factor. Generally speaking, the manual states that project planning should take ecosystems into account “according to their sensitivity and strategic value for the country”, without explicitly explaining what this means. But a good overview of the possible meaning can be obtained by analysing the construction of the national map of compensatory factors and the four criteria that have been taken into account.

The compensation factor is used to calculate the size of the area over which compensation actions will have to be implemented by the carrier of the project that caused the impacts. The area that will be impacted by a project is first separated according to the different ecosystems, as categorized by the national map of ecosystems produced by the IDEAM. Each of them has then an extension which will be multiplied by the compensation factor to obtain the area to be compensated for each ecosystem (keeping them separated, since the ecosystemic equivalency criteria has to be met for each type of impacted ecosystem, except in the particular case of linear infrastructure).

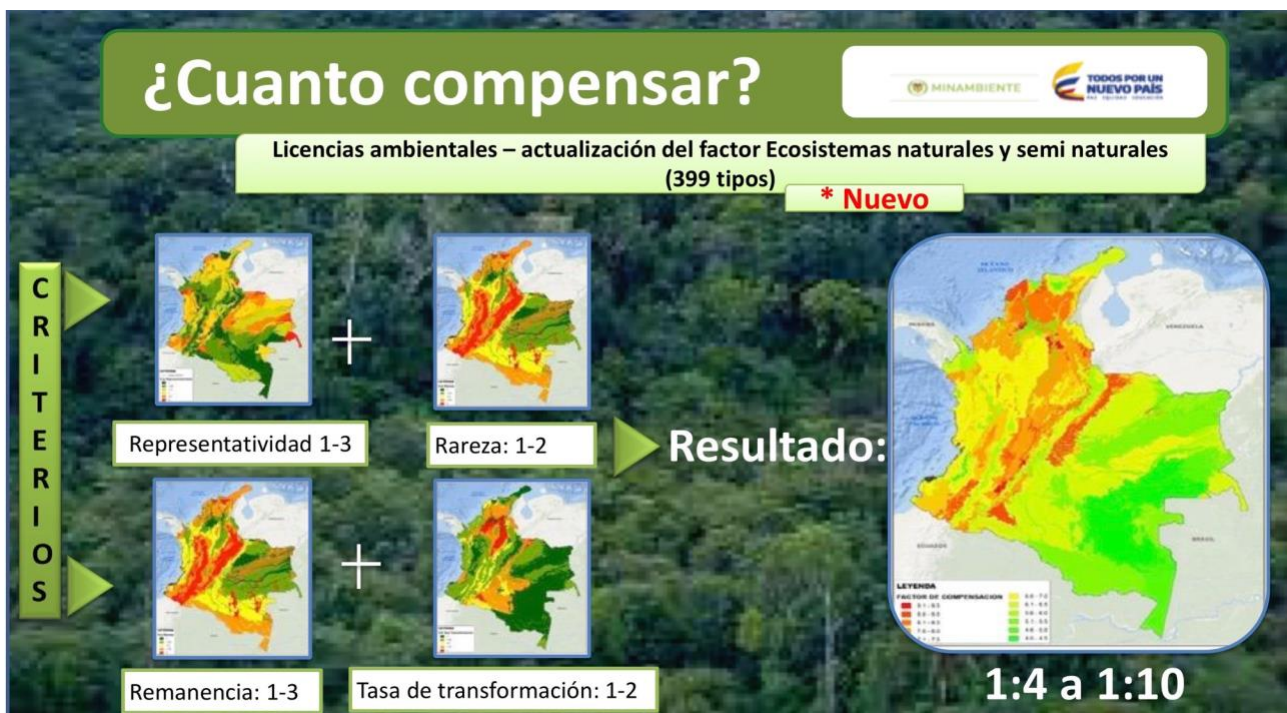
It is worth noting that in Peru, where was also recently developed a compensation scheme, it was chosen to adapt an Australian methodology which establishes factors based on the area multiplied by ‘ecosystem quality’, while in Colombia, which already had forms of compensation, associated to a sort of previous ‘compensation culture’ which would be easier to continue, it has been chosen to only consider the type of ecosystem and the area:

Colombia venía utilizando factores de compensación antes de la entrada en vigencia, por eso te digo que no olvides que acá viene implementación de muchos años, en Perú no, entonces en Perú cogieron y revisaron mucha bibliografía y dijeron, me gusta el tema de la métrica de hectáreas de calidad de Australia, voy a adaptarla para acá, y nosotros como sí veníamos utilizando hace muchos años los factores, dijimos hay que cambiarles ese enfoque de árbol por árbol y volverlo ecosistema y seguimos en la misma onda de los factores. (TNC2)

In the Colombian Manual, the compensation factor (ranging from 4 to 10) is designed as the sum of four sub-factors (ranging either from 1 to 3 or 1 to 2, see Figure 30), each representing an ecosystem characteristic

that seemed relevant to be considered as a means of valuation to the authors in the Colombian context: the representation of the ecosystem in national protected areas (a criterion which may raise question, considered the numerous problems mentioned above of the capacity of the state to truly protect its National Parks), its rarity, its remanence or persistence, and its annual transformation rate. In a draft update of the manual in 2015¹²³, considered that the first manual had been “a fundamental leadership move”*, since the World Bank recognized it as the first country in the world to take into account those four factors. Of course their actual impact could be contested, especially, as we will see, considering the issues of implementation of the compensations and the somewhat failure of the factors to serve as deterrents. But they still represent a very interesting, and possibility revealing, exercise of hierarchization and relative valuation of ecosystems at a national level.

Figure 30: Slide issued from a presentation of the second Manual by the MADS in 2018¹²⁴.



The first two factors correspond to a relationship between a particular ecosystem in a particular place with, in the first case, the rest of that ecosystem elsewhere and, in the second case, with other types of ecosystems. More specifically, the ecosystem representation in national protected areas considers the relationship that a specific type of ecosystem in a given place with the rest of the ‘same’ ecosystem that national policies have protected over time (like a percentage of protection); the rarity expresses a ‘natural’ relationship of difference with “other” ecosystems types.

The other two factors are the ‘remanence’ (meaning ‘what is the extension of this type of ecosystem that is left compared to a point in the past’), which expresses a relationship with the rest of the ‘same’ existing and

¹²³ MADS, Manual Para La Asignación De Compensaciones Por Pérdida De Biodiversidad (Actualización Julio 2015), Documento para comentarios externos.

¹²⁴ MADS, 2018, Manual Para La Asignación De Compensaciones Del Componente Biotico, Powerpoint presentation. <http://www.andi.com.co/Uploads/Presentaci%C3%B3n%20Manual%20de%20compensaci%C3%B3n%20-%20ANDI.pdf>

former ecosystem type, taking into account what could be understood as the cumulative historical degradation or reduction of this type of ecosystem; and the annual transformation rate expresses a relationship with the rest of the ‘same’ ecosystem at time t versus $t-1$, which therefore refers to its contemporary ongoing loss in terms of area, and therefore to the contemporary ongoing degradation or reduction of this type of ecosystem. The compensation subfactors therefore do not account for heterogeneous sources of degradation, nor for regional or local differences or dynamics.

In all the cases, what is considered for the valuation isn’t what could be referred to as an “intrinsic” value of an ecosystem type, but the historical and spatial relationships at different scales that a delimited area, categorized in an ecosystem type, bears. The ‘rarity’ is the only parameter which, despite its evaluation in a present time which is the result of cotransformations over a wide timeframe, seem to be considered as a stable external natural given¹²⁵. ‘Representativity’ and ‘remanence’ on the other hand mix a timeframe, which seem comparable for the two sub factors, since it corresponds to the beginning of the (ongoing) formation of the National Parks (from 1960) to present for the first one and (even if the reference point isn’t explicit and that Alexander von Humboldt had already described profoundly transformed ecosystems at the time of its travel in Latin America at the beginning of the 19th century) for vaguely-defined ‘modern’ times for the second.

On the Relational Aspect of Ecosystem Valuations

While the valuations here could all be considered relational, since the ‘value’ of an ecosystem is given through processes of categorization and comparison, they are obviously not considering the same nature of relations than the ones implicitly expressed when talking about relational values. The relations are largely geographical and temporal, even if it also includes variations of species, and they are constructed within a variety of scales and spaces of calculation.

Nonetheless, as expressed before, a number of factors criteria of the Manual are sometimes considered to take into account some type of relation that ‘Colombians’ had and have with regard to a specific type of ecosystem. Indeed, when I asked to a compensation specialist working for a public research institute, they told me:

De alguna manera los índices que han definido el cuanto compensar están metiendo la gente, si hay más o menores niveles de remanencia es que ha habido transformación histórica más.. Si hay mayores niveles de representatividad en el sistema de áreas protegidas también es que ha habido mayor respuesta del estado para declarar esas áreas. Si hay mayor o menor tasa de transformación anual también tiene que ver con el uso que se le está dando al territorio. Está de alguna manera intrínseco eso. (Humboldt1)

Therefore, it is not about the relation that one individual or group has with one specific area which happens to fit into one category of ecosystem, but about the aggregated relations of uniformed Colombians-as-country versus ecosystems or biomes types in a national context, in terms of border delimitations, preservation, historical and recent degradation and, as we will see, future potentialities. Nonetheless, an internal report of the Humboldt Institute, based on an inquiry made among its employees, expressed that many

¹²⁵ Indeed what is considered in this case are not the ecosystems but what is called the ‘ecosystems-biomes/biogeographic districts’ in the first Manual and the ‘BIOMA_I AVH’ in the second one, which correspond to larger areas than ecosystems and encompassing similar varieties of them and which isn’t sensitive to the type of vegetation cover (and in particular to its transformation). See below the section on ecosystem definitions.

considered that the process of identification of impacts wasn't taking into account "the benefits of biodiversity, long-term losses and the relationship of these to human well-being"* , and wished that criteria of valuation of biodiversity and of economic and well-being consequences of its loss would be included, along with a higher involvement of local actors in the process.

Rarity

In the first manual, rarity, which is said to aim at representing the level of species endemism, is actually composed by two sub factors: the first one is the proportional relation between the extension of the type of ecosystem considered within the biome-biogeographical district within which it is situated, and the second one is also a proportion in terms of area but between the biome-biogeographical district and the country. The values found are then divided into five categories to which are then assigned a factor of 1, 1.25, 1.5, 1.75 or 2, and the final factor of rarity is the highest of the two. The complexity of this process may therefore seem quite high, when compared to what it aims to do, that is expressing that, depending on the rarity of an ecosystem, an impacted area of one hectare will have to be compensated with an area of a size equal or up to two-fold if the ecosystem is considered 'very rare' according to the definition and process of calculation. Without entering in too much detail, the way of calculating the rarity was changed in the second Manual by a formula taking into account the 'uniqueness', considering the expected average composition of species of an area versus the 'potential species', and the 'irreplicability', which a proportion in terms of area. What is interesting is to see the ontological transformations of a given area through the distinct modelling and processes of characterization through an active work for the emergence of properties or the construction of proxy for 'capturing' properties and create hierarchies according to the relevance that situated processes of knowledge production expressed about them.

Remanence

Between the two Manuals, an interesting difference can be noted with regard to the 'remanence' subfactor. In both cases, the ecosystems or areas (the typology varies) are classified into five categories of remanence ranging from 'very low' to 'very high'. But the factor, ranging from 1 to 3, isn't assigned to the categories in the same fashion. In the first Manual, both categories of 'very high' and 'very low' remanence have been given a factor of three, then a factor of two for 'high' and 'low', and one only for 'medium', according to what they called a U-curve. As explained in a paper published by the team of TNC which worked on the Manual, they thought that both ends deserved high factors, although for different reasons:

Here, we sought to give higher offset ratios for both systems with high levels of its historic distribution maintained as well as to ecological systems with low levels of its historic distribution maintained. It makes sense to maintain ecological systems with few remaining patches relative to their historic distribution; requiring higher offset ratios would help stem further loss. It also makes sense to seek to maintain ecological systems that have a high amount remaining of their historic distribution as these systems are likely to be highly intact, and requiring a higher offset ratio would encourage continued preservation of these systems. (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013b)

But, interestingly, what was “making sense” at some point was abandoned in the second version, which simply stated that more compensation should be done when little remains (although shifting a bit the classification edges, so to keep a somewhat similar average compensation factor). Indeed, in the first Manual they considered that an ecosystem with a high remanence was similar to being ‘pristine’, which was supporting the idea to give it a higher compensation factor. Interestingly, here the idea of pristinity therefore doesn’t refer to the way it is often used, that is referring to a specific area (generally of a minimum extension), but to a high percentage of preservation in ‘natural state’ with regard to its ‘original’ extension. While not expressed, it seems that what was considered pristine and therefore valuable became simply a consideration of abundance less worthy of protection. Consequently, areas like the Amazon region, the llanos, the Choco or La Guajira, that are considered proportionally highly preserved, had their subfactor significantly lowered. Nonetheless, since the definitions of the considered type of areas, the sources of information, the changes in the years between the two Manuals and the classification, were modified, the Choco, for example, changed from being considered as having a high remanence to a medium one, which implied a factor reduction from 3 to 2.

What is interesting also with the concept of remanence, taken here as an example, is that it requires multiple types of reference points in order to be defined through the necessary commensurabilization process that goes along its specific mode of valuation: one temporal, with on one hand the unspecified (and somewhat ungraspable) time when it had its full extent in natural conditions, and on the other the present, when (‘where’ could probably equally be used here) only the ‘relicts’ remains; one qualitative assessing the level of naturalness (or conversely the grade of transformation) of a specifically defined area, therefore comparing the areas’ quality against each other; another reference point could be considered spatial (but is also in some regards very much virtual), since it is the total area of the ecosystem.

Other differences exist on this subfactor between the two Manuals, and it can be noted in particular the transformation of the concept of ‘natural state’ of an ecosystem toward the consideration of areas in ‘natural conditions’, seemingly multiplying the number of characteristics defining naturalness, and removing an encompassing idea of ‘state’ to which the concept of ‘pristine’ usually makes reference.

While the concept changed between the two Manuals, the idea of using the concept of ‘remanence’ itself wasn’t immediately obvious in the design phase of the first Manual, during which the idea was at first to only focus on the rate of transformation:

La idea era un poco decir “bueno, de todas maneras, en Colombia la tasa de pérdida es muy alta y hay muchos sistemas de compensaciones que estaban basados como en la tasa de pérdida, y si la tasa de pérdida es muy alta, realmente tenías que compensar muy poco”, ¿no? Se llama algo como el background rate of loss, que es como la tasa de pérdida natural de los sistemas, o por las acciones. Entonces tú sacabas como esa tasa y con base en esa tasa de pérdidas, sacabas como el área que tenías que compensar, ¿no? Si esa área de todos modos se iba a perder, ¡perdés! , Y compensabas menos, ¿no? Pero si la tasa era muy lenta, pues decías “bueno, esto de todos modos no se iba a perder”, entonces pagabas más, pero si la tasa era muy alta, dijimos “si es en Colombia no puede ser ¿no?”, entonces dijimos “vámonos filosóficamente por otro lado” y dijimos “bueno, evaluamos es, qué tanto tenemos de ese ecosistema” entonces sí nos fuimos un poco por la idea de decir ¿cuál es la remanencia? que eran como uno de los principios del esquema y decir “bueno ¿cuánto me queda? entonces bosque seco me queda muy poquito, entonces nos inventamos un poco lo de los factores (WALSHBURGER)

The ways the factors are designed are assimilated by this interviewee to ‘philosophies’, indicating that, from their point of view, the choices made by the actors are not considered as simple technical issues but as problems that encompass and relate to a variety of ontological and moral questions and which force them to take a stand. In this example, it appears that the right factor of compensation is linked to the understanding of wider dynamics and of its relation to the impacted area, but also depends on the responsibility that is attributed to the additional impacts, and whether what is right, with regard to the definition of certain objectives and a sort of distribution of responsibilities of impacts and of preservation, is to go along the existing dynamics (to the condition that it can be successfully externalized from the assessed process) or to go against.

This relates to the examples taken in the previous chapter and relative to the problematic use by companies (but following the ‘best practices’) of counterfactual scenarios to demonstrate the additionality of their actions of compensation. Therefore their actions didn’t have value in themselves, but were valued with regard to a certain external (or, possibly more accurately, externalized) context (or ‘background’, as in ‘background rate of loss’).

Rate of Loss

The rate of loss was nonetheless kept as one of the four subfactors, but reverting the way it is generally used in the counterfactual scenarios produced to demonstrate additionality. Here, they considered that an ecosystem which suffer higher rates of losses should be compensated more (the ratio varies between 1 and 2), because “it is considered that an ecosystem-biome/biogeographical district will be lost more rapidly as anthropogenic pressure is increased by a new project, work or activity”*, and that this “risk of transformation” may threaten the landscapes’ ecological integrity (see below the section on the modes of risk internalization in compensations).

Specific Cases

Some specific cases have also been contemplated in the Manual regarding their assignation of a compensation factor. Areas that are considered “secondary vegetation” (that is vegetation evaluated as being less than 15 years old) are still associated with an ecosystem type, which therefore does not depend on the biodiversity ‘quality’ or ecosystem ‘health’ of the area considered, have their factor halved. Areas considered either “unnatural” or “transformed” (that is that they are constructed, industrial or agricultural) may only be compensated by a factor of 1:1 and only as long as, as we will see in the next chapter, the environmental authority find acceptable arguments to justify that it should be compensated.

Also, a number of ecosystems have also been attributed a compensation factor of 10:1 regardless of what the calculation formula would have given, with regard to their “strategic” or “critical” aspect. This concerns in particular paramos, RAMSAR wetlands, dry forests and mangroves. Paramos are ecosystems usually described as fragile and the very slow growth of some of its iconic flora makes almost impossible to bet on compensation and restoration efforts to avoid the loss. They are also considered of primary importance for the country and are often called the “water factories” of Colombia. Ramsar wetlands are wetlands for which national institutions worked through a difficult path to have them recognized as protected under the Ramsar Convention on Wetlands of International Importance which, as its name indicates, gives them a status of

“international importance” which makes the pride of the countries where they are, and entangling them in global biodiversity discussions. Dry forests do not have this status, but here the main concern is the severe reduction of their extension in the past decades, making that the remaining areas to be considered crucial for their conservation. Finally, mangroves became to be recognized for the numerous ecosystems services they provide, while being also difficult to restore. While not providing here an extensive list of the arguments for each of those ecosystems, it is interesting to note how for each of them a number of characteristics are put forward according to their relevancy for a variety of preoccupation, and how they are taken (and made to be part of according to selected properties) into concerns and dynamics that intertwine various scales and actors, including non-human ones in the form of diversely collaborative species and services.

4.5.3 A 'more-than-natural' ecosystemic equivalency

While the factors expressed an intention for taking into account specific parameters, the problem was that, while theoretically meaningful, it appeared that finding accurate data in order to give estimate of each of them proved to be challenging for the institutions in charge of creating the maps, and that it would have to be dealt with high levels of risks and uncertainties. On the other hand, it may seem obvious at first what the characteristics of the different ecosystems are, therefore allowing the possibility of conventionally recognizing, distinguishing and categorizing them without difficulties, in practice it is not only a complex exercise, but often also a non-consensual one.

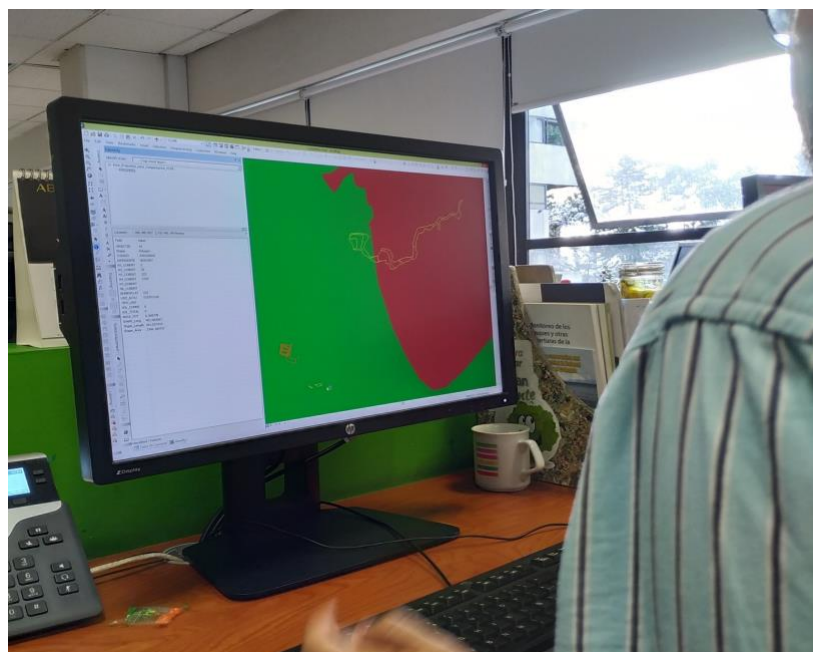
a) Equivalency, scales and levels of information

The practical use of the concept of ecosystems gives another example of the interdependence of the descriptions and the issue of scale, especially when applied to the compensations and the national map of ecosystems used to create the map of compensation factors.

A survey done among professionals of the Humboldt Institute, the main public institution conducting research in ecology, concluded that there was “lack of technical and conceptual clarity on what should be compensated for”*, that is the ecosystems, and is partly due to “the use of an ecosystem map at a scale of 1:500,000, which contains very general information and lacks sufficient biological information to advance compensation for specific projects. Considering the heterogeneity of the Colombian territory, respondents suggest that mechanisms should be defined to identify and adequately quantify the impacts and compensation needs for the particularities of the country beyond vegetation cover, which is why the ecosystem map should be updated”* (Silva Arias, Corzo, and Portocarrero-Aya 2016). In particular, they considered that this scale didn’t allow the inclusion of biodiversity attributes like species, genes and services, but also the culture, as well as the dynamics of transformation.

And indeed when this map has to be used to see what are the impacted ecosystem types by a specific project (and without even considering at this point its state of ‘conservation’ or ‘transformation’), which therefore requires to zoom in, the ecosystems become represented by homogenous colours and strict separation (see Figure 31), disconnected from their actual dynamics and the relations that humans might have woven within it. The level of detail is then quite far from what some professionals seem to hope.

Figure 31: analysis of the cartographical information of a project by an employee of the ANLA. In the area of the project evaluated this day, two types of ecosystems are found, each represented by one colour and strictly separated.



But even if they succeeded in creating a more detailed map for the second Manual, the problem, for those who produced the map to be used to build the compensation factors, was to find a scale that allows providing information in adequacy with the data available at a given scale, but without pretending to give a level of detail that would be impossible to have without creating too high levels of information uncertainty:

Fue un balance en últimas entre niveles de incertidumbre de lo que tenemos de alguna manera, con algún nivel de conciencia de la información, y otros sobre los que tenemos menos. Y yo también he sido un convencido de que no, una mejor escala no permite tomar mejores decisiones, o bueno no mejor escala, más bien, que la información nacional que el soporte que debemos brindar desde los institutos de investigación está más para el nivel nacional en la toma de decisiones que para los niveles regionales. (...) El anterior manual que estaba en escala 1:500 000 y seis años después una escala 1:100.000 no podríamos haber hecho el tránsito directamente a 1:25 000, aunque tengamos mejores satélites, aunque tengamos mejores métodos, hay muchas áreas que no hemos ido a reconocer, entonces 1:100 000 es un poco más seguro, a pesar de que está mucho más lejos del 1:1, que es donde finalmente ocurre en el territorio¹²⁶, pero tenemos que ir haciendolo poco a poco, aprender a caminar antes de pretender correr. (Humboldt1)

As the expert of the Humboldt Institute that I've interviewed explains, the elaboration of the map emerged from a process navigating between uncertainties, known-unknowns, limitations of the technical production of data and perspectives from an institute whose role is more to inform national policies than helping local decisions. But beyond the simple issue of 'data production', a crucial interplay between this production and conceptual reconfigurations was also at work. For Murcia et al. (2017), a number of issues exist around the definition of ecologically equivalent areas, and in particular because four different types of ecosystem definitions have historically been used in Colombia, and because of the absence of an explicit minimum

¹²⁶ On this desire of raising the level of details of maps to 1:1, to counter the inherent incompleteness of the descriptions so to be able to represent the territory in all its details and carry along the infinity of its properties, it is always beneficial to come back to the well-know short story, "On the exactitude in Science", written by Jorge Luis Borges in 1946.

‘degree of equivalence’ beyond which areas or ecosystems should be considered equivalent. One of the problems they identify is based on the relation between the particularities of the ecosystems and the ways information about them have been generated: “tropical ecosystems are supremely heterogeneous at a fine scale, and despite efforts to improve vegetation classification processes, it cannot be overlooked that the maps used in MaFE (a software for identifying ecologically equivalent areas in Colombia) have largely been generated using remotely sensed information”* (that is through the use of satellites). They therefore consider that, contrarily to what is usually expressed, the maps obtained say little about the actual biodiversity of the represented ecosystems. In particular, issues emerge when considering that the use of sensors leads to a wide misinterpretation of non-forested and dry ecosystems, that in the same ‘type’ of ecosystem bird species greatly varies from one river basin to another, that birds and amphibians do not share the same patterns of distribution, or that the geological history led to uneven phylogenetic evolution of organisms. They conclude that “the concept of ecological affinity should consider the different biogeographical patterns for different taxonomic groups”*, therefore blowing away the possibility for the ecological science of designing a unified “ecological affinity” between areas and even less an ecological equivalency.

One of the authors of this study, that I’ve interviewed, further described the issues of aiming at generating maps representing data with more details, and the problem wasn’t the value of the compensation factor but the incomplete information with which the factors have been set:

El problema no es [los factores de compensación], el problema es que realmente las bases ecológicas y el conocimiento sobre nuestros ecosistemas, el conocimiento digamos sobre el grado de equivalencia ecológica de nuestros ecosistemas, el grado de precisión en los mapas, que le permitan al funcionario con toda certeza decir este sitio está afectando a este ecosistema y no este otro, esos son unos factores que meten muchísimo error en ese cálculo, el problema no es de que haya una fórmula con unos números que se multiplican y que si los digamos los valores para cada uno de esos cuatro factores son muchos, o muy poquitos, eso son en últimas es irrelevante porque la base de conocimientos sobre la cual tú estás o el funcionario está asignando un valor entre 1 y 3 o 1 y 4, o lo que sea, para cada uno de esos factores esa es información incompleta si? (Independent1)

Another study also considered the Manual as “based on a very rigid technical conceptual development — formulas and compensation factors — which ignores the particularities of the territory. The fact that there is a national list of compensation factors suggests a static and homogenous territory, which is far from the reality of the country”* (Silva Arias et al. 2016). As we will further see, this view of the territory both necessary for and created by biodiversity offsets is a continuous source and the product of frictions between the ‘great richness that has to be preserved’, with its diversity and local specificities, and commensurability and statistical description requirements.

b) Adjusting ecosystem definitions to fit offsets constraints

On the other hand, a much higher level of detail would actually have created many problems, due to the multiplication of the number of ecosystem types that companies would have had to compensate for. Not only had the scale to be limited because of uncertainties but the 2018 Manual explains that they also intended to limit the number of ecosystems that would have to be considered equivalent:

Con el objetivo de contar con unidades que representen la riqueza biótica de las áreas y al mismo tiempo faciliten la identificación de equivalencias para compensar de una manera objetiva y clara para todos los usuarios, se definió como unidad de análisis, el cruce entre bioma y unidad biótica del Mapa Nacional de Ecosistemas (Ideam 2017). Esta clasificación arrojó un total de 399 unidades denominadas Bioma – Unidad Biótica (BIOMA_IAVH).

One of the editors of the Manual who is working for The Nature Conservancy explained to me that this change in the focus of the equivalency and the typology of units representing the territory was necessary because otherwise the level of detail would have been so high that finding an equivalent area would have been impossible:

El país tenía ya unas unidades biogeográficas que esas unidades biogeográficas, fueron las que se introdujeron ahí un poco, como para decir “bueno, por lo menos si estás impactando un bosque, pues por lo menos que tenga una composición también un poco similar”, entonces el nuevo mapa de ecosistemas, el que acaba de salir el año pasado, ese finalmente también ya tiene la parte biogeográfica. (...) Pero este mapa dice que hay más de 2000 ecosistemas, entonces si tú quieres encontrar un ecosistema equivalente para hacer la compensación, pues no lo vas a encontrar. Entonces dijimos “bueno, por lo menos simplifiquemos un poco las posibilidades de ver cómo encontrar esas equivalencias”. Entonces más o menos quedó un poco que es, que tiene que ser el mismo equipo de cobertura ¿no? Si impactas un bosque, tienes que devolverme el bosque y en una bioregión o una ecorregión similar. Digamos se abre un poco más el espectro para que finalmente se pudiera encontrar la equivalencia más fácilmente. (TNC3)

As we saw previously, several ecosystem definitions and categorizations were already used before the advent of biodiversity offsets in Colombia, and were based on different criteria according to different needs, ontological perspectives, data availability and ecological theories. But offsets, with their peculiar requirement of ecological or ecosystemic equivalency, led to further redefinitions reconfiguring both what was taken into account as well as their ecology of difference.

c) Mapping hypothetical ecosystem potentialities

Although the idea of qualifying any ecosystem may seem achievable, as long as it is possible to visit it physically to study its basic characteristics such as its composition and structure, it is much more difficult, conceptually and technically, to qualify and systematically categorize an altered ecosystem or a growing ‘secondary vegetation’, and compare it with others equivalent to it. In both cases, it is often considered more relevant to see it as the intact ecosystem that it were, would have been or could become.

The first compensation manual was more oriented toward conservation actions, so what was important was to know the current vegetation cover, but since the recommendations began to move toward the restoration of ecosystems in the second manual, the map which had to accompany it had to propose a more subtle factor of remanence by reproducing biogeographic ecosystems based on what they are now or on hypotheses and models reconstructing the “natural” ecosystems that they may have been and could potentially become again. A compensation specialist that I’ve interviewed further describes the idea and process:

La remanencia está vinculada a un procedimiento muy estándar que es la aplicación del método Corine Land Cover que es bastante internacional. En Europa se utiliza mucho, sobre todo para mirar para el ordenamiento territorial los diferentes mosaicos de uso de la tierra. Aquí lo pretendimos mirar en sentido contrario, mirar las áreas más naturales y menos naturales, y se basa en la respuesta

espectral semiautomatizada, porque finalmente tiene muchas horas-hombres metidos ahí (...) Y básicamente se hace sobre la hipótesis biogeográfica de un territorio homogéneo en su interior y heterogéneo con el del lado, digamos un ecosistema o una aproximación hipotética a un ecosistema, para saber qué tanto ha sido totalmente transformado, si ya son cultivos o cualquier otra industria, y qué tanto está en vegetación secundaria. No sabemos si la vegetación secundaria son sitios que están perdiendo biodiversidad o por el contrario sitios que habían perdido toda la biodiversidad y van ganando, eso no lo sabemos. Pero si sabemos cuánto del ecosistema original está en ese momento en condiciones relativamente naturales, desde el satélite, exclusivamente. (...) La idea de este mapa es justamente esa dicotomía entre ecosistemas originales y ecosistemas potenciales. El mapa del anterior manual era sobre coberturas de la tierra, exactamente lo que nos dijera el Corine Land Cover. Pero acá hay una hipótesis de ecosistemas potenciales originales: originales pleistocénicos, esto es después de la última glaciación y antes digamos del antropoceno, es decir de la entrada fuerte o de las evidencias físicas del tránsito del hombre sobre la tierra; y potenciales, utilizado en el mismo contexto: si las dejáramos quietas hacia donde irían, o que debería ser a las condiciones pleistocénicas. Pero ambas hipótesis sobre todo en procesos de cambios climáticos acelerados como los que estamos sucediendo, son hipótesis sin suficiente contraste, por eso nos estamos quedando en los 15 años, al menos saber que eran originales de hace 15 años. (Humboldt1)

The person recounting this process is a biologist absolutely aware of the past and present ongoing transformations of the ecosystems, even before the ‘Anthropocene’. It can nonetheless be noted the appeal in the context of restoration activities to refer to hypotheses or scenarios of the times before the humans, and the ‘what if we weren’t there’, as well as to note the perturbations caused to those scenarios by the emergence of the figures of the Anthropocene or the climate change, and a technical (and metaphysical?) pragmatism which finally lead to adopt a definition of “originals as of 15 years ago”. This rejoins the intense debates in restoration ecology relative to the ‘naturalness’ of ecosystems, the understanding of their historical trajectory, and the ethical foundations for choosing to attempt to recreate them in ways that would allow qualifying them of “natural artefacts” (Waller 2016).

Spatial scales are here again crucial as well (and will prove to be even more as we move toward impact evaluations and compensation plans in the following chapter), and even if the extract above does not really specify what is meant by a territory, which is hypothetically and approximately considered homogenous inside and heterogenous with the one or many out-sides. But it is precisely the apparent homogeneity, ecological-from-satellite and to some of the many types of extents that could be imagined that it might encompass, that seems to define here the territory.

The question of the ways for knowing the type of ecosystem that should be the goal of the restoration hasn’t been raised during my observations. But, when compensations turned toward this mode of action, it seemed to effectively be on the basis of the map produced by the institute, as well as by seeking information on what might have existed ‘before’, regardless of the dynamics that may have taken place since or those envisaged for the future.

4.5.4 Determining where and how compensations should be done

While the compensations have to be established in ‘ecologically equivalent’ areas, the Manual also details a number of other criteria that should be followed to select the specific site of compensation. The first one imposes the compensation to be in the same hydrographic subzone that the impacted site or, if this isn’t possible

and in accordance to appropriate ‘technical justification’, in the wider hydrographic zone. While this criterion could be considered to be purely geographic, it is in fact moral as well, since it is the expression of a valuation process putting in relation understanding of the nature of biodiversity with justifications for its preservation, that is ontological and axiological plans. In this case, it also shows the importance given at hydrographic subzones and zones as units of analyses with relevance for biodiversity in the context and scale, or landscape, within which an area and its relations are considered that are to be preserved. It could be considered that underneath is an idea (one could also probably say a wish — to oneself — or a promise — to others) that whatever is around the area to be impacted, whether they are ecosystems, plants, animals, humans or else, and that had woven a relation with it would be compensated for their loss by virtual possibilities within the reach of seeds, foot or fly. There is, in this sense, also a construction of a certain ecology of the compensation, aiming at not only replacing ‘biodiversity’ but also relations, even if in practice they are barely studied and if on occasions, as we will see, actors consider that it doesn’t make so much sense. This criterion of relative geographic proximity is also one of the crucial differences between biodiversity offsets and carbon offsets, expressing views of their difference of geographical and ontological nature, and of their distinct articulations to space in terms of relation and diffusion.

The second criterion is that smaller compensation areas can be complemented with the restoration of areas enhancing connectivity. Thirdly, the areas ‘must preferably’ be part of areas identified in the National Restoration Plan, or of importance for the conservation by a variety of instruments or institutions. Finally, the last criterion is one of proximity (or even of being adjacent) to areas where compensation has been done previously, in order to increase its size or connect it with ecosystems with which it is chorologically dependent (that is that the respective distribution of organisms in each ecosystem is considered to be interrelated). Therefore, each of the criteria proposes a specific configuration of the relation between the nature of biodiversity and modes of valuation and hierarchization of diverse activities, as well as of their articulation with a flexible scalability of the concept of no net loss. Next chapter will offer specific examples of the choices made by companies, their justifications and their analysis by the environmental authority.

Without entering into too much detail on the different ways that are offered to the companies to establish their compensations, this is generally a complex process various considerations over what has been designated as the “actions, modes, mechanisms and forms of implementation”, each bringing their challenges. The problem is first ecological, in the scientific sense, since the actions involve the preservation or restoration of an area. The second Manual added the possibility to develop actions of transformation of productive activities of local populations toward the ‘sustainable use’ of biodiversity, to contribute to social equity and peace consolidation. While no strict guidelines have been established regarding the demonstration of the ‘additionality’ of the compensation, similar discussions to those described in the preceding chapter took place on the adequacy of compensating through conservation activities, which are sometimes said to not counterbalance the impacts on biodiversity, or through restoration activities, which timeframe and associated uncertainties make many actors circumspect to the least.

Other difficulties were expressed regarding the ‘modes’ of the compensation, which is the type of legal relation that the company implementing compensation activities will have with the area receiving the compensation. Numerous discussions took place during the design of the Manuals to evaluate the relative appropriateness of establishing conservation accords, ecological easements, payments for environmental

services, rent or land acquisition. The problem as expressed by actors is to decide on one hand whether it is more morally, technically and practically appropriate that the compensated area should remain the properties of local actors, or of the company, or if it should become the property of the regional authorities or part of the National Parks network, and on the other which formula would allow the longest duration of the compensations (or highest chances to last, but what should exactly last and for how long was a subject of numerous debates as well as confusion). Moral aspects, in particular in terms of justice, concerns here the destination and nature of the benefits or 'gains' of biodiversity.

Some interviewees also mentioned the potential social impacts of the compensations, as well as the fact that they are not said in the Manuals as having to be taken into account, and therefore reviewers of the compensation plans cannot, sometimes to their frustration, impose to the companies to provide studies about it. Actually, while it mentions that it should be looked for a potential 'synergy' between environmental and social compensations, it seemed to remain only wishful thinking from the experience of the people I talked to.

4.5.5 Setting the duration of the compensations

Compensations that were implemented before the publication of the Manual of Compensation for Biodiversity Loss for the other types of compensations, generally in the form of reforestation, had the obligation to be monitored for three years. After that, measures of the survival rate of the trees were taken and, if the rate was above the legal requirement (generally 90%), the company could leave it there. Considering that this timeframe was unreasonably low, both from a practical and ecological point of view, the first Manual set the obligation at a duration equal to the 'useful lifespan' (*la vida útil*) of the project that generated the compensations. It was considered that this would be 'fairer' for both biodiversity and companies, and that it was intended to avoid the pitfalls of having compensations that last as long as the impacts, like it was tried in other countries but led to infinite obligations if the infrastructure, for example, was permanent. But this generated opposite types of difficulties, in particular for projects which construction is relatively fast but that will remain in place permanently, as it is the case for roads for example. In this case, the licensed 'project' is the construction of a segment of the road, which can last from a few months up to a couple of years, and not its operation. But putting in place a compensation project in this timeframe is practically impossible, generating in turn critics toward the environmental authority for not obligating companies to reach a no net loss of biodiversity, as one employee of the ANLA explains:

Hay un desfile de gente que viene y es que 'ustedes la autoridad no hace' y es que 'a la autoridad le falta' y es que 'por qué no funciona eso' ... (...) Pues tan fácil que es criticar al que esté [en la autoridad], pero yo tengo en tiempo real es una empresa que me dice: 'señora, yo le dije a usted que la licencia era por seis meses, pues, yo no puedo estar más en territorio y además es que ni siquiera, es que no, es que yo le tengo que entregar esta concesión al señor que la va a operar, o sea, yo también tengo un instrumento jurídico para moverme, es usted la que quiere desconocer eso'. (...) El no me va a llegar a la no pérdida neta de biodiversidad cuando el arbolito de vaina ha apenas crecido un poquito. (...) Finalmente es un esfuerzo de un año en el cual el señor efectivamente, pues digamos de muy buena gana, quiere cumplir una obligación que está en la norma pero que técnicamente pues no lo puede hacer. O sea es que eso no es, no es.. (ANLA1)

I will further describe in the next chapters the problems that emerge for all the actors when the norm seemingly do not let them do what they consider would right to do, personally or regarding the expressed

intentions of the norm itself and to which they ought to adhere, as well as the critics toward the ANLA and the relations to companies. What I want to put emphasis on here is the centrality of the question of the duration with regard to the compensations, and how this duration enters in friction with numerous other temporal regimes, whether bureaucratic, legal, practical or ecological, all being acknowledged, lived and perceived differently by the different actors, and that therefore producing the ‘appropriate’ duration requires balancing and putting on the same level fundamentally different actants, interests, dynamics and scales.

Considering the limitations of the ‘useful lifespan’ timeframe, and the numerous conceptual and practical difficulties and misunderstanding it generated, it has been proposed in the second Manual that the compensations should last “until compliance with the proposed objectives is demonstrated, in terms of results, in the compensation plan and according to the baseline of the impacted area, which is determined on the basis of indicators and the results of monitoring and follow-up”*. Here the temporality therefore aims at becoming indexed to the rhythm of evolution of biodiversity. But the Manual doesn’t specify the type of indicators that should be favoured, leading to other complications, nor the ambition that the compensation plans should have (they make reference to the baseline of the impacted area, but this not always appropriate, in particular for conservation activities), giving freedom to the companies to set them themselves and to the ANLA to accept or recuse them, depending on how each interprets what no net loss of biodiversity means.

4.6 The futures of compensations

Since the publication of the first Manual, and similarly to what occurred at the international level, in Colombia a number of researchers or university students in ecology take on themselves to investigate particular aspects of the compensations which they found incomplete or problematic, with regard to their preoccupations, and to propose a variety of solutions.

For example, Novoa Rodriguez and Sanchez Lopez (Rodríguez and López 2016), started with the premise that despite the great importance of wetlands, there are anthropogenic drivers of their degradation. They therefore regretted that the calculation of the compensation factor offered in the Manual did not include the ecosystem services that they deliver, and in particular their ecosystem functions with regard to biodiversity, carbon storage and greenhouse gas emissions. Their solution is therefore to include those services in the calculation of the factor to complement “complement this methodology in a reasonable way, favouring those wetlands that have so far not been taken into account and whose conservation and restoration should undoubtedly be the object of environmental policies”*. The higher compensation factor obtained from the proposed calculation including the new elements was seen as the reflection of the high ecological value of the studied wetlands with regard to the ecological functions taken into account. Other avenues have been explored (or advocated for), like the extension of the compensation to livestock activities (Martinez 2018).

Further modifications to the Manual have also been promulgated by a number of actors throughout the years. For example, the orientation toward a greater use of financial mechanisms for the further improvement of the guidelines was already desired by the Minister during his speech¹²⁷ at the launch event of the first

¹²⁷ Speech by the Minister for the Environment on the launch of the Manual para la Asignación de Compensaciones por pérdida de Biodiversidad, 2 August 2012.

Manual. It was based on the Colombian “reality”, which is that numerous national parks have historically been declared with people living within their boundaries, many of them still living in the parks, and that those are not financially viable, reason why he would like to see adjustments in the Manual to allow for the compensation through financial mechanisms prioritizing them. Among other things, he wanted to see the possibility of doing an economic valuation of the impacted ecosystem services to indirectly compensate through investment funds managing a portfolio of projects, thus optimizing the private investments, according to him, and even if he was also stating the importance of being very careful not to enter in conflict with the communities, and the compensating near the impacted area also had to be a priority. Indeed, a draft version of an update of the Manual circulated in 2015 was putting forward the new possibility for the companies to present aggregated compensation plans (i.e. plans that combine the offsets required for several activities or licences into one project) and the intention to drive compensations toward supporting public and private conservation strategies. But this draft wasn’t validated and these possibilities were not anymore mentioned in the 2018 version which was promulgated (at least not with regard to the biodiversity compensations, as the aggregation became allowed for forestal compensations).

4.6.1 Consultations and workshops organized by the actors

The 2016 project of resolution¹²⁸ to promulgate this 2015 manual gave a few hints at why the Ministry considered necessary to update the compensations Manual: “During the implementation of the Manual, it was observed the need to establish guidelines for the compensation of the biotic component for the other environmental permits and authorizations, to strengthen technical aspects related to the application of the mitigation hierarchy, monitoring, follow-up of the compensation plans and to clarify some definitions (...)”*.

The 2015 draft version of the manual put forward the ‘lessons learned’ since the implementation and the collaboration of the regional environmental authorities (through the agreement 154 established with WCS), as well as the apprenticeship of the exchanges on international experiences. The Manual of 2018 indicates additionally the support of the experts from the same group as the first Manual, that is TNC, WWF and CI, but this time also from the Humboldt Institute and the ANLA, as well as a new NGO participant, the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ).

In turn, no mention is made of the numerous companies who gave their feedback on the first manual, in particular at the occasion of workshops organized by the National Association of Colombian Businessmen (ANDI) through its “biodiversity and development initiative”, to which participate the Humboldt Institute and the National Parks. One of the goals of this programme is to create a national platform of ‘companies and biodiversity’ by 2030, contributing to the conservation and sustainable use of biodiversity and “promoting rules and schemes that maximize the positive impact of the productive sector in the territories”*.

This objective of being at the initiative of new rules and schemes confirm their desire to fully be a member of the epistemic community gathering around the establishment of ‘good practices’ for the private sector with regard to their impacts on biodiversity, accompanying the development of new regulations.

<https://www.youtube.com/watch?v=uMrhmJMZVDc>

¹²⁸ MADS, draft resolution, “Por la cual se adopta la actualización del Manual para la Asignación de Compensaciones Ambientales del Componente Biótico y se toman otras determinaciones”, 2016. The resolution wasn’t promulgated until 2018, with most of the comments quoted here removed.

During the years 2015 to 2019, they organized at least nine workshops in relation to biodiversity offsets, in which representatives of companies, NGOs, consulting firms, the ANLA, the Humboldt, the MADS, the National Parks and others, met to discuss and present examples, pilot projects or issues with compensations. The first three focused on the challenges posed by the implementation of the first Manual and suggest future orientations for the next one. As mentioned in the short report of the first encounter¹²⁹, which was organized to discuss the updated version of the Manual proposed by the MADS and opened to comments, “the positions and comments that emerged in the development of the thematic committee (...) are part of a constructive exercise of the instruments in the search for and implementation of the biodiversity pilots and compliance with the obligations”*. But this collective reflection was also aiming at being able to weigh on the Ministry to convince them to include “innovative schemes such as those proposed in the Biodiversity initiative, which maximize the actions of companies beyond the ecosystem equivalency”*. There was indeed the expression of tension, as we will further see later, between what is considered a rigidity of the ecosystem equivalency, which supports claims of no net loss, and the possible ‘maximization’ of the compensations.

Another three workshops were focused on the offsetting of biodiversity in the case of linear projects, which had been completely overlooked in the first Manual, and are an extreme example of the mentioned tension. As those relatively narrow infrastructures cross numerous ecosystems over long distances, assessing their impacts on biodiversity and their possible compensations is even trickier for the advocates of a no net loss of biodiversity. As changes to the legislation were discussed, the Humboldt was reminding that offsets were “the most promising mechanism for balancing conservation and development”¹³⁰*, while the ANDI agreed that it is a “vital instrument¹³¹” to reach the same goal. Finally, other workshops were organized on the possibility to establish compensations within small privately-owned conservation reserves (Reservas Naturales de la Sociedad Civil), share experiences on aggregated compensations (mostly orientated toward forestal compensations, since their guidelines are more flexible), and on the methods for biodiversity monitoring in the context of compensations.

4.6.2 Grouped compensations and habitat banking

This idea of grouping compensation was often put forward for its supposed ecological benefits and also in terms of management and financial optimization related to economies of scale it allows. But it is also argued that “the international trend is to facilitate the aggregation of offsets to improve their effectiveness and impact”* (Murcia et al. 2017), reason why Colombia should also look into this direction:

For the implementation of offsets, it is necessary to develop individual, costly and time-consuming projects — for which there is still no certainty as to their contribution to avoiding biodiversity loss — , which points to the need to think of joint processes by company, areas, productive sector or regional offset initiatives that are effective and efficient in the face of biodiversity loss.* (Silva Arias et al. 2016)

¹²⁹ ANDI, 2015, Memorias del encuentro ‘Plan nacional de restauración y actualización manual de compensaciones’.

¹³⁰ Humboldt Institute, 2017, Usuarios y autoridades trabajan en alternativas a la implementación de compensaciones ambientales en proyectos lineales.

<http://www.humboldt.org.co/es/actualidad/item/1078-alternativas-implementacion-compensaciones-ambientales>

¹³¹ ANDI, 2017, Memorias del encuentro ‘Compensaciones ambientales en proyectos lineales- Características, debilidades, oportunidades, fortalezas y amenazas de los mecanismos de implementación’.

A year after the publication of the first Manual, Mariana Sarmiento, who would become one of the most active proponents of habitat banking in Colombia, published a article on the website of Ecosystem Marketplace on the “lead” that Colombia was taking in biodiversity offsetting¹³² in Latin America. After having described the Colombian scheme, she also detailed some of its limitations. On this basis, for her, “the question then becomes, how can Colombia transitions toward a system that promotes timely, cost effective, transparent, and efficient offsets? One mechanism for achieving this is by moving toward a conservation banking system”, considering that, “despite its challenges, many in the field believe that conservation banks accelerate the implementation of high-quality biodiversity offsets”. This way of analysing the difficulties of compensation to then advance habitat banking as a solution was repeated on various occasions in presentations, reports and articles, like one named *Hydrocarbons and Biodiversity Offsets: An Opportunity for Sustainable Development* and written in 2014 by Mariana Sarmiento and Adriana Soto (2014), who had just left her position of Vice Minister of the Environment to join Sarmiento at WCS.

The ‘many in the field’ who hold the belief that habitat banking was needed to organize in the form of an active lobbying from non-governmental organizations, including Fondepúblico, WCS, TNC and Fondoaccion, to pursue the development of environmental markets. Not afraid of using an ironic formulation replacing at the centre the question of the ontological alignment of means and ends, one of their publications on emerging environmental markets (Fondo Acción et al. 2016) considered that “the country is making progress in the consolidation of an environment conducive to the development of a biodiversity market. (...) this market has been strengthened by the issuance of regulations for the reduction and management of environmental impacts, in which those related to environmental compensations stand out”*.

Following this, habitat banks have been given a legal existence in 2017. Allowing them as a way to fulfil compensation obligations was said to be a solution to a number of challenges posed by the other means, including the fact that oil or mining companies are responsible for compensating their impacts on biodiversity while not owning particular expertise on issues of conservation or restoration (even if they can use the services of specialized consultancies, which could lead to low quality compensations. They are defined as private or public areas in which actions of conservation or restorations are implemented, which is finally summarized as the fact that they are “administrated for their high natural resource values”*. In order to be an acceptable compensation mechanism, they “must meet the criteria of additionality, complementarity, sustainability, permanence, payment for performance and knowledge management and must be registered”* (Resolution 1051 of 2017). Finally, the owner of the Habitat Bank is allowed to receive payments from companies who would like to use this mechanism to fulfil their legal obligations to compensate the impacts of their licensed projects.

Nonetheless, like it is the case in other countries, the obligations for biodiversity offsets to respect and ecosystem equivalence as well as to be located relatively near the impact site limit greatly the possibilities for using banks of habitat as a mechanism for the implementation of actions of compensation. But the Guide of Habitat Bank by the Ministry of the Environment (Ministerio de Ambiente y Desarrollo Sostenible 2018) indicates on the contrary that it has been demonstrated in other countries that they can contribute well to the implementation of compensation measures and that they are an effective for the permanent conservation of

¹³² Mariana Sarmiento, 24 July 2013, Colombia Takes Lead In Latin American Biodiversity Offsetting, Ecosystem Marketplace.
<http://www.ecosystemmarketplace.com/articles/colombia-takes-lead-br-in-latin-american-biodiversity-offsetting/>

ecosystems. A report advocating for the consolidation of environmental markets in Colombia (Fondo Acción, World Conservation Society, Fundepúblico 2017), which considered them as a way to “facilitate, reinforce and finance the conservation of natural areas”*, said that compensation banks (a synonym to habitat banks and other variations) would allow technical expertise to be concentrated in specialized organizations, so to allow a better quality of the actions implemented and a relief for the companies. More specifically, they put forward the possibility of achieving a “higher environmental value”, since they could regroup multiple compensation obligations, a better monitoring, due to the obligations of the bank to its customers, and also to provide a guarantee of longer conservation times and the reduction of both compensation costs and transaction costs.

Finally, while habitat banking doesn't seem to gain so much traction, despite the important implication of its proponents, the ANLA, in coordination with the CARs and a number of NGOs, work toward the development of regional portfolios of compensation to help companies establish compensations more easily and that would be more ecologically meaningful at a regional level.

4.7 Difficulties and failures of offsetting in Colombia

Despite being at the origin of the Colombian offsets guidelines, professionals of TNC Colombia, which worked in partnership with the MADS to elaborate the first Manual and then provide options for its improvement, along with specialists of TNC working on offsets at the international level, expressed that in some situations ‘out-of-kind’ offsets (also designated as ‘trading-up’ or ‘like-for-better’ offsets, which offer to compensate impacts on an ecosystem by actions focused on an ecosystem of ‘higher ecological value’) might be preferable to the current requirement for ‘in-kind’ (or ‘like-for-like’) offsets (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013a). Indeed, they argued, in some cases “requiring in-kind offsets could limit the potential benefit that an offset might provide”, as they could advantageously be used to protect another endangered ecosystem or reinforce existing conservation areas. They were also advocating for a revision of the mitigation hierarchy assessment and an enhanced focus on the avoidance of impacts (see the section on the mitigation hierarchy in Chapter 8)

In another paper the following year (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013b), the same group, having identified an issue with the selection of the offsets sites in Colombia, and in particular the difficulties that companies may encounter in choosing a site that may lead to the greatest conservation benefits, presented the rules that were retained as taking into account what they called a “landscape scale perspective”. Their aim was to describe a methodology (in the paper, but representing the one used in the Manual) that would ensure that “the use of offsets is ecologically equivalent to impacts” so that, they say, “offset actions would provide value equal to that lost as a result of development”. Here, the enhanced ecological comparison through landscape-level metrics should “ensure that offsets are directed to areas consistent with landscape-level conservation goals”, that is areas that would best allow for maintaining biodiversity viability. They were also preoccupied by the inadequacy of the offsets duration, which they considered should “persist at least as long as onsite impacts”.

A 2014 report of the OECD (2014) on Colombia's environmental performance saw the publication of the Manual as a "positive development", but considered necessary a reinforcement of the legal basis in order to allow the widening its application, which should be demonstrated through pilot projects.

The paper by Sarmiento and Soto (2014) mentioned above pointed four major difficulties for the implementation of compensations, mainly taking a policy development or state perspective: the 'offer' of areas available for compensation; the traceability of the areas of compensation, which owner and location are often unclear; achieving the permanence and duration of the compensations; the generation of more precise information, in particular for a more accurate calculation of the compensation factor. On top of these problems, Sarmiento (2014) considered as well in subsequent paper problems of quality of the compensations, of implementation times, of financial sustainability, or a problem of 'flexibility' (which replaced the 'offer' problem). Some of those complications are said to become counterproductive incentives to companies to delay the compensation or not do them well, and even to use those issues as excuses to not comply with their obligations.

A few years later, other authors (including one from the previous paper) published a report on the future of environmental markets in Colombia (Fondo Acción et al. 2016), trying to evaluate the implementations of compensations, expressed that they had been confronted to the absence of information allowing them to know whether the instrument was successfully applied, and that it was even worse trying to know if the compensation activities had actually been executed and where they were. They were there confronted to the same issues that had been described for the other types of compensations and that were hoped to be overcome with the development of offsets.

Nonetheless, for one of my interviewees, the lack of evaluation doesn't hide the general inefficiency of compensations:

las evaluaciones del sector ambiental también no han sido suficientemente buenas, hay que cambiar el mecanismo y eso fue lo que pasó en 2012; pero también de 2012 a 2018 pues fue evidente que no han servido, o han sido ha sido muy limitado a su beneficio. (Humboldt1)

This state of fact was widely shared among the people I've interviewed, and in a number of reports, but the reasons and consequences that might be drawn from it largely varied.

A follow-up report on environmental markets (Fondo Acción et al. 2017) listed some of the problems encountered "to materialize [the demand for areas of land generated by compensation] into concrete actions of restoration or conservation". They pointed what seemed to be more related to the point of view of the companies, like the uncertainties regarding the time and criteria of evaluation and approval of the compensation plan by the environmental authority, regarding the criteria for determining that the compensation is 'completed' (see the section on the design of indicators for the completion of compensations), and regarding the duration of the compensation, and in particular the difficulties linked to the discrepancy between the project and the compensation timeframes, the problem of 'demand and offer' restrictions due to the obligation for ecosystem equivalency, and the deficiency in registering, verifying, and controlling the compensation activities, leading to "negative repercussions in the efficiency of the market".

In a short description of the compensations done in 2016 (Corzo, Silva, and M), authors of the Humboldt expressed that "there are many technical, legal and procedural difficulties that have delayed full compliance with this obligation"*. Indeed, after four years, they considered that no action of compensation suggested in

the “novel and revolutionary methodology”* had successfully started to be implemented by the companies, who shared the blame with the environmental authority.

With regards to the compensations, the Humboldt Institute and its employees acknowledged the many difficulties encountered by the compensations, and were wondering what should be the appropriate position of the Institute with regard to these, some of them being related to the design of the Manual itself, to the lack of information regarding the assessment of biodiversity and ecosystems services, and others concerning the orientation of the practical implementation of the compensation which is the responsibility of the companies (Silva Arias et al. 2016). While this makes the institute aware of the issues, which are said not to be resolved in the second Manual, it also put it in a situation where most of them are not related to its attributions, putting it in an uncomfortable situation (Silva Arias et al. 2016). It is therefore interesting to see how the institutional arrangement formed around compensation makes that the leading biodiversity institute may not totally feel in its role to handle compensation issues despite the potential importance attributed to this mechanism by other actors.

In the years 2016–2018, at least five important reports focusing on doing a “critical analysis” of the compensations were published (for the general public or internal use) by different organizations in Colombia, including the Humboldt, and the Center for International Forestry Research (CIFOR).

One of them was a comparative analysis of compensation in different countries, done by researchers of the Humboldt Institute and based on the understanding that compensations in the USA, Germany and Australia were successful, was aimed at looking into the reasons why the Manual “does not work for the Colombian case”* (Ariza Pardo and Moreno Hincapie 2017). Following the observation that the compensations were failing, they considered that the lack of visible results was largely due to the “lack of clarity and inefficiency in the formulation and implementation of environmental regulations”*.

In *La restauración ecológica en el marco de las compensaciones por pérdida de biodiversidad en Colombia: Un análisis crítico* (Murcia et al. 2017), one of the most interesting analysis of the Colombian compensation scheme, the general findings are similar, since the authors consider that the compensation plans submitted by companies and including restoration activities “are far from complying with the No Net Loss principle”*. They detail issues (and recommendations) on different levels, showing the difficult alignment that has to be reached (or a successful friction between them) to perform a no net loss of biodiversity: conceptual, technical, ecological (regarding the baseline, restoration and monitoring), legal, administrative and institutional, as well as territorial and social. If, they say, “the national objective is to maintain the minimum target of a net loss of biodiversity equal to zero, despite the implementation of infrastructure projects”*, then for them the way forward is also to have clearer and stricter parameters, but their cautious vision of restoration made them ask that compensations should also be more demanding.

This relatively low level of success in the implementation of the compensations in the country could explain why it didn’t seem to exist a substantial mobilization or discussions about compensations at the national level beyond the specialists’ circles. Indeed, there seem to be a much stronger focus from the part of social organizations toward the impacts of specific projects on vulnerable populations and, in this sense, the impacts on biodiversity are largely considered through the dependency to it that some social groups have, in particular for their alimentation. But, as we will see, these affectations are considered to fall within the area of

social compensations, which are independent from the biodiversity compensations, even if they may both origin from the same direct impacts of a project.

As we've seen, depending on the type context in which the reports were made, the potential readers and their objectives, and in particular the emphasis on a particular nature of the compensations, that is whether they are an ecological practice, an administrative process, a social policy or a market mechanism, makes that the perceived problems and resolutions greatly vary. Each study also expresses an understanding of the context in which compensations have been implemented, as a real or false solution to the introductory plot. The condensed history that is sometimes presented leads authors to generalize in surprising ways:

Throughout history, economic growth has been vital for the development of society, leading to an indiscriminate exploitation of natural resources, based on an anthropocentric vision, breaking the nature-human relationship and endangering "environmental sustainability that guarantees the satisfaction of needs for future generations". This situation has led to the search for a balance between development and the environment.* (Ariza Pardo and Moreno Hincapie 2017)

What is surprising here isn't the relation between ontologies and ethics (although it isn't that common in the offsets literature in Colombia), but the implicit idea that compensations result from this problematization, and therefore may somehow be a tool, a way or the evidence that the "society" does steer away from a modern anthropocentric broken human-nature relation.

4.8 Compensation and no net loss

4.8.1 Compensation factor and no net loss

As was shown in the Table 12 above, the definitions of 'no net loss', referring to actions or the "point of balance", do not include details on how to locate this point in space-time configurations. The compensations previous to the publication of the Manual also included factors, but that they were notoriously "subjected to the subjectivity of the evaluators".

Finding problematic the variation of ways with which factors were established, one interviewee working at the time for the Ministry decided with some colleagues, meeting informally around a cup of coffee, to establish the basic formula for the compensation of the oil extraction projects they were evaluating. They proposed, in a sort of prefiguration of what would later be established, as described above, to use three basic elements with a ponderation, so to be able to support their decisions to impose a compensation factor, taking as examples 1:3 or 1:5. Following the classification system they were familiar with, the Holdridge life-zones system, they considered broad categories of vegetation cover, giving for example more importance to the dry forests, and the altitude (with highest elevations compensating more), completed by the type of species of trees that would be cut.

Another person, who also used to establish forest compensations, explained how they were themselves deciding the ratio to be imposed:

Finalmente tú nunca vas a lograr tener un ecosistema exactamente igual al que afectaste, o sea nunca, así tú hagas una restauración nunca va a ser igual a lo que afectaste, si? Pueda que tengas las mismas

especies, la misma distribución pero, por más que sea, nunca así tu restaures, así vayas a hacer una restauración ecológica de cientos de años, nunca A va a ser igual que B, nunca. Pero tu empiezas a reducir un poco esa incertidumbre pensando en que por lo menos sea un área que equivale, o que el ecosistema sea equivalente, que por lo menos el área permita que tú recuperes un poco la biodiversidad perdida en el tiempo, porque yo cuando talo, talo completo, pero cuando empieza a hacer acciones de conservación o restauración pues esto apenas empieza a crecer y se va a tomar un tiempo en llegar hasta allá. La probabilidad de esto que yo estoy restaurando vuelva a hacer esto, pues es baja, entonces cómo reduzco un poco esa probabilidad, pues ampliando el área. Es como un poco la concepción de por qué siempre es un área mayor, de que esto se vaya a perder, a quemar a no sé qué, pues incrementando el área, en teoría, o sea, hay como muchas teorías detrás de, de por qué finalmente el que sea mucha más área de la original, da tranquilidad de que no se está perdiendo la biodiversidad, si? Conceptualmente de ahí a que eso suceda, es otra cosa. (...)

- Si usted se sentía más tranquila con un factor 10, porque no un factor de 50?

Por un tema digamos... Uno por un tema como de costos y de proporcionalidad digamos, cuando normalmente se logran se logra o se tiene en el tiempo que esos arbolitos que empiezan como de 30 centímetros, porque eran más de restauración, logren llegar a 30 años, digamos 10 hectáreas en área, me podrían estar por lo menos en volumen de masa forestal, compensando un poquito lo que se había perdido. (MADS2)

In this case, considerations for the establishment of the low threshold of the factor were therefore related to uncertainty considered to emerge from a low probability of success, or even from the impossibility of the task at hand, that is the restoration. But, ecologically, it can be somewhat countered by the size of ecosystem and its equivalency (even if it wasn't a requirement at the time), but also when considering the compensation currency in terms of volume of wood¹³³. On the other end, the upper limit was limited by a question of “costs and proportionality”.

Wondering then how does the compensation factor of the Manual relates to no net loss and embeds ethical preoccupations toward biodiversity loss, I looked for how those who participated in the design of the Manual came up with the 4–10 range, and why it wasn't lower, or higher.

In a paper, written by people of TNC who worked on the first Manual, and published soon after, it was expressed that “while the Colombian Ministry of Environment and Sustainable Development (MADS) sought to improve the current mitigation framework there were constraints to the changes that could be made. For example, the current regulatory process caps the maximum offset to impact ratio at 10 to 1 and any changes we recommended were limited by this cap” (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013b). While the interviews I've done showed that most actors involved in the design of the Manual, including people at TNC, considered that the range of the compensation factor was somewhat consensual (not in the sense that it was the first choice for all the actors, but that a sort of consensus had progressively been managed to be reached around those numbers — at least among the actors who had a say), in this paper they seem to express that they would have liked to make it higher, and put the blame on its limitation to a tenfold ratio on the MADS. This wish was confirmed by an author of the Manual for TNC, as they explained the origin of the range and another reason why it isn't higher:

¹³³ While forest compensations were usually based on a number of trees, the total volume of wood was also taken into account, and remained a common unit of measure for the forest engineers, a profession largely represented among compensation specialists.

Nos inventamos un poco lo de los factores, los factores de compensación entonces que también son un poco arbitrarios ¿no? porque realmente no hay ninguna... desde la biología pues el 1 a 10, pues más o menos venía como de las... digamos de los factores históricos que se estaban aplicando en Colombia, o en México. En México también tenían un sistema de factores, entonces miramos como dentro de todas las opciones, bueno cuál es un rango razonable...

- Razonable para qué?

Para decir bueno, no perder. Lo razonable ahí es, cómo podemos de todas maneras, si yo impacto una hectárea y tengo que volver 10, de todos modos, yo tengo un factor de seguridad. (...) Yo trabajé mucho tiempo en regeneración, digamos, en cómo se recupera la selva digamos, húmeda tropical en el Amazonas, tú después de cien años, todavía notas que hubo una intervención. Entonces tú dices: "bueno, ¿tengo es que esperar cien años"? Pues no. Obviamente creo que sí deberíamos tener un factor muchísimo más alto. Pero también el tema es de la... Yo creo que podía ser más alto, yo también creo que podía ser 1:20 digamos; pero más o menos también, como es un tema político, los sectores tienen una fuerza muy grande acá ¿no? digamos en las grandes empresas de... no nos hubieran aceptado el manual. Cuando cambiamos el manual, la protesta y la resistencia fue altísima, altísima, altísima. (...) La gente decía "¡No, eso es imposible, eso es muy costoso, eso va a hacer inviable todos los proyectos en Colombia!" Claro, porque se les hacía mucho más complejo. (WALSHBURGER)

Since no ecological studies could help determine a factor on objective basis, the interviewee therefore explain that what was looked for was a "reasonable range", which would also serve as a safety margin. But, finally, the factor seemed to mostly express the respective strength of the parties to impose their views and in particular the strong opposition from the companies.

4.8.2 Power to the compensation factor?

While some were seeing the compensation factor as enabling a 'net gain' of biodiversity, by its multiplication, a majority of the people that I met considered that the idea embedded the design of the compensation factor was also to create a sort of negative incentive, since a higher factor would correspond to larger and more costly compensations for the companies who would affect high-factor ecosystems:

Hay lugares que por su sensibilidad ecosistémica no deberían tener proyectos, los páramos, los bosques secos, los humedales, algunos bosques que aún mantienen sus características ecosistémicas, no deberían ser tocados por proyectos ¿por qué? porque hacen parte de una estructura ecológica principal o hacen parte de unas prioridades de conservación o hacen parte de unos corredores ecológicos, entonces uno debería como Estado decir: "aquí no se deberían planificar esos proyectos". Y el manual lo que hace es eso, el manual lo que hace es desincentivar la presencia de proyectos en áreas que tienen algunas particularidades en términos de conservación. (TNC3)

Despite that, some interviewees doubted that the compensation factor had the deterring effect it was sometimes hoped it would have, and in this case that the interview even personally hoped it would have when participating to the design of the Manual:

Los hidrocarburos están donde tienen que estar no van a ir a salirse de ahí, porque el factor de compensación sea alto no, lo que sí pueden es tratar de buscar que sus instalaciones se vayan por ecosistemas transformados o que impacten en menor medida lo natural. (...) En cada región va a haber el desarrollo que le toque por diversas condiciones, no sólo por el factor de compensación bajo, condiciones económicas, sociales, de gobierno, de seguridad. (...) Los factores no van a hacer que el

desarrollo de una región se vaya para el otro, imposible; para que haya un desarrollo económico, contribuyen muchas razones, no un factor de compensación, más, si tomamos en cuenta que cuando se desarrollan los proyectos lo último que miran es el factor de compensación. O sea, pensar que esa es la variable de diseño de los proyectos en Colombia, eso es una total mentira, eso es creerse... creerse importante. (TNC2)

Finally, while those designing the factor considered that they were sending a clear message regarding what matters, and that it would participate in the reduction of impact at their basis, through the application of the mitigation hierarchy, the actual functioning of the carriers of projects doesn't seem to obey this reasoning (see Chapter 8 for a further analysis of the scope of the mitigation hierarchy).

4.8.3 Information, risks and uncertainties

Beyond the possible or desired nudge that the compensation factor was sometimes considered to be, in many occasions it also appeared to be a tool for uncertainty and risk management. In particular, some consider that “offset factors buffer uncertainties associated with loss and gain quantifications, temporary losses of biodiversity and risks in offset implementation” (Instituto Humboldt & The Nature Conservancy 2019). Moreover, one interviewee expressed that the subfactors which make up the compensation factor were as well “picking up a lot of uncertainties that would otherwise be also represented, so whether that ecosystem is very rare, or whether or not the ecosystem is represented in the national system of protected areas, or whether or not...”* (MADS2). Therefore, the uncertainties that the subfactors aim at “gathering” are said here to exist independently of the compensations and relatively to the preservation of biodiversity according to the country's dynamics. But other people or documents also mentioned the factor as being a way to counterbalance other risks, including time lag, restoration failures and other potential issues.

In the context of compensations, the factors have also been described as a means of simplification of the quantification of biodiversity-for-compensation, since it allows to give a conveniently simple ‘biodiversity value’ to ecosystems: “the offsetting factors set out in both manuals also become a tool that partially solves the problems associated with biodiversity quantification”* (Instituto Humboldt & The Nature Conservancy 2019). More generally, the development of offsets illustrates the wide scope of the uncertainties embedded in the very concept of biodiversity, but also on the technical and practical means to produce knowledge about it.

This is for example the case of informations compiled in the form of maps and aiming at representing characteristics and dynamics of the biodiversity of the territory, based on models and hypotheses sensitive to temporal and spatial scales. This poses not only the question of their relationship with informations coming both from satellite imagery and fieldwork observations, with their respective incompleteness, but also of their success in articulating the axiological, conventional and phenomenological regimes of proof (Chateauraynaud and Debaz 2017).

In the ‘Where’ section on the Manual, it is said that the phase of selection of the area which will receive the compensation activities should include and take into account “the level of risk of the offset measure, whether from current or future threats, the effect of cumulative impacts, or from an ineffective implementation of the offset plan”* . But, as we will see later, the former are barely considered, while in many cases the latter is considered to be totally or partially addressed by the compensation factor (when it is not considered that it is actually the very *raison d'être* of the factor).

Considered sometimes as another generator of risk, the relation between compensations and climate change was only mentioned in my interviews when I specifically asked if and how compensation should or could take it into account. It has generally been answered that it wasn't taken considered because it would be too complex and that data was missing, but some first attempts of trying to understand what it would mean for compensations were mentioned. The largest preoccupations, mentioned in my interviews and other documents, concerned the loss of stable ecosystems of reference, the difficulties to anticipate ecosystem transformations and therefore the goals that restorations have to reach, but also the impact on the calculation of the no net loss of biodiversity and the risks that would fall onto areas of compensation, and therefore onto companies and consultancies who are responsible in front of the environmental authority. One consultant was presenting climate change among the 'externalities' that may affect biodiversity in general, as well as particular compensation activities, a category that is also sometimes used to refer to illegal deforestation.

As we see, the risks caused by the loss of biodiversity and its potential adverse effects and the ways it can be confronted, in particular through compensation, are themselves understood and addressed in ways deploying a myriad of other risks of different nature and scope and which plays out on many different levels, including those of information and practical activities, and related to various degrees of known and unknown uncertainties.

In sum, this question of risk management and 'internalization' came up in relation to multiple aspects of the compensation, and while it is common to evaluate them in environmental impact assessments, their characteristics and modes of accounting seem of a different nature for the compensations.

In the present case, it seems that the internalization of constraints, externalities, risks and uncertainties is only possible, or considered as effective, as long as actors agree that the process of internalization actually accounts for what it says it's accounting. The problem isn't whether they are internalized but what internalizing means and how is portrayed a successful internalization, and consequently actors have to find common (or successfully impose theirs) methods of commensurability that will conventionally be expressed by the internalization. In turn, this process of internalization/externalization could probably be understood first as a sort of redefinition of the moral boundaries linked to responsibility and care and, secondly, as an operation aiming at shifting potential issues of problems between the two types of consequentialism (open or closed consequentialism) defined by Chateauraynaud & Debaz (2017) according to the valuation (and hierarchization) of their respective importance by the different actors.

4.8.4 No net loss and compensation effectivity indicators

In 2018, the second Manual was to be published, therefore introducing the new obligation for companies to reach their compensation goals and not only to maintain their activities for a specific duration. Based on the observation that companies were struggling to propose meaningful goals and indicators, and that the environmental authority was equally struggling to evaluate the compensations, due to what was qualified as methodological and practical gaps, the Humboldt Institute and TNC made an agreement to jointly develop a system of information "to enable evaluation and monitoring of the effectiveness of environmental offsets, as a proxy for the 'No Net Loss of Biodiversity' and for the compliance with project objectives and targets"* (Instituto Humboldt & The Nature Conservancy 2019). This consequently appeared to be a strong effort from

those institutions toward a standardized commensurabilization of biodiversity (as biodiversity-by-compensation) gains through indicators, with the added constraint of the automatization of their generation and calculation.

As they explain, while Colombia choose the ecosystems as their compensation ‘currency’ (which literally translate from Spanish as the ‘money of transaction’), which is a necessary step for calculating losses and establishing compensation obligations,

ecosystems themselves are highly complex, temporally dynamic and spatially heterogeneous. Although the Manual establishes some minimum criteria for assessing ecosystems (i.e. attributes of composition, structure, function, integrity, landscape context and ecosystem services), precisely in an attempt to mitigate the uncertainty associated with their complexity, it is necessary to understand that these will never be sufficient to accurately establish losses or gains in biodiversity. Although the new Manual partially corrects this problem by moving away from the requirement to demonstrate an NNL toward meeting targets and objectives, the SEMCA should be explicit about its scope: it should restrict itself to assessing attributes that provide indications of biodiversity gains or losses at offset sites, as an approximation to the concept of NNL — always considering this concept as the north — , but the system does not aim to demonstrate the NNL of each offset project.* (Instituto Humboldt & The Nature Conservancy 2019)

The report on the compensation effectivity indicators also expresses that methodologies of quantification of biodiversity are proposed in the MADS guide for EIAs, but that “do not allow to define with certainty (given the very uncertainty of landscapes and ecological dynamics) which of these impacts are residual, and which are avoided, prevented or mitigated, so calculations of biodiversity losses are imprecise and highly subjective. Under this constraint, it is difficult to determine whether an offset project, through its biodiversity gains, has balanced the losses.”*

Besides, the core of the demonstration of the no net loss of biodiversity, and as described in the previous chapter, is to compare the gain and the losses. But to do this, each has first to be calculated against the values of an ‘ecosystem of reference’, similar in principle to a control group in randomized studies, but with complex systems and metaphysical twists rendering it basically impracticable. On the basis of the work of researchers specialized in compensation, the authors of the system of evaluation looked for more ‘flexibility’ and, “in this sense, and in order to avoid conceptual discussions, this system avoids using or restricting itself to the term ‘reference ecosystem’, and addresses it through three possible reference scenarios”* (Instituto Humboldt & The Nature Conservancy 2019) for comparing biodiversity values. The first one, which they consider to be in theory the most appropriate for the NNL calculations, relates to the impacted site (before the impact, but which values will survive it to represent it as needed in the future), the second one is the goals that have been set for the compensation site (representing a potential future ecosystem based on nearby sites), and the third one is the common counterfactual scenario for the compensation site, representing “those predictions that can be made about the condition of a natural system under certain current trends, but which have not yet occurred”*. Here, each scenario creates a distinct spatiotemporal space of calculation, like three parallel universes that have to be conjured, and within which qualities of an evolving localized present are contrasted with qualities either of a vanished other location, of a desired potential future or of theoretical future that would have been.

I will not detail here the indicators, despite their interesting representation and hierarchization of the pertinency of some biodiversity characteristics in relation to compensation, but it can be noted that the authors

chose to assign to projects different sets of indicators depending on their size, their duration and whether there is the presence of forest (in particular for suggesting indicators of deforestation and carbon capture). Their constraints were to find indicators at the crossroads (or possibly more accurately a middle ground) of technical possibilities, ecological interest, possibility of standardization, ease of sharing and understanding, cost of creation, and relation to what is already demanded in an obligatory way, so that they do not represent an extra work but can be inferred or calculated from existing data.

More interestingly, the different type of actors involved in the design process of those indicators didn't agree on the most important qualities that they should have, due to their different perspectives on their main purpose. Gathered for a workshop by the leading institutions, that I've also been able to attend¹³⁴, the attendees have been asked at some point to discuss and comment the proposed indicators in three distinct work groups, acknowledging their possible divergence: 'authorities' (CARs, ANLA, National Parks, ...), companies and industry representatives, and NGOs, academia and consulting firms.

While each group wasn't homogenous (and actually consulting firms were much closer to companies than to the academia), distinct preoccupations can be drawn for each type of actor, as expressed in the following examples.

People from companies were discussing the relation between the proposed indicators and what they already had to provide in the EIA, and were above all interested to have indicators that could help them demonstrate that they had fulfilled their compensation obligations for a specific project. They were also preoccupied by the interplay and integration of the temporal scales of the specific one-off measurements, of the indicators, and of the compensations.

Similarly to companies, people from consultancies were concerned by the "practicality and feasibility of the information requirements for the elaboration of the indicators"*¹³⁴, and even more by indicators that would take into account parameters considered external to the compensation project and independent from the will of the companies, like the proximity and connectivity with similar ecosystems or the deforestation in the area. As one person said: "I have a commitment to a client for a particular project, and I can't blame them for everything that happens in a region when they only make a compensation of a few hectares"*¹³⁴.

Someone from the Ministry of Mines, possibly worried for the impact on mining activities and companies, the indicators should be adapted for each type of compensation activity, and there should be standardized criteria for the evaluation of the compensation plans by the environmental authority.

A representative of the National Parks expressed the view of national institutions, which was the necessity of having "adaptive indicators, which can be scalable from the project level to the regional and national level, and which can actually demonstrate the effectiveness of offsets in terms of biodiversity"*¹³⁴, that is, in their views, the possibility to evaluate the effectivity of the compensations at the regional and national levels, opening therefore the possibility to evaluate the effectivity of the compensation policy in general.

In sum, each type of actor saw this system of indicators as a potential tool to help them in their mission, but differences in interests and understandings of what an effective compensation should mean, and in particular regarding the scales at which effectivity should be considered, led to large discrepancies in the preferred modes of valuation. While the indicators were intended to be scalable, their respective scalability and sensibility to timeframes were strongly discussed by the actors. Moreover, as the scenarios established to

¹³⁴ TNC and Humboldt Institute, Taller de socialización y retroalimentación de la estructura conceptual del sistema de seguimiento a la efectividad de las compensaciones ambientales en Colombia, 15/11/2018, Bogota.

reach an approximation of a no net loss, and described above, express, the no net loss is understood as being a property of a specific project (including a compensation and a reference), and the variety of scenarios of reference and their specificity are quite likely to render any aggregated or scaled data difficult to interpret. Offering a different reading of the meaning of the process, one person detached by TNC to work at the Ministry of the Environment, insisted that the indicators should mostly be seen as “a language of standardization that allows articulation between the different actors involved in the compensation process”* (something that was seemingly in perfect adequacy with their own status). While local populations were not consulted and were considered as not interested in this particular system of evaluation, the difficulties of its design was quite revealing of the tensions and circulations between approaches of the compensations in terms of dispositif of management of the territory, of possibilities that they could be seen as controlling the milieux in which they inevitably have to insert themselves, while being also subjected to the dynamics of heterogenous milieux in interaction, with the risk of challenging or deceiving the reconfiguration of the world carried out by compensations and the purification of their evaluation (Chateauraynaud and Debaz 2017).

4.8.5 Tensions between accuracy and applicability

In his PhD dissertation, *Unnatural Markets The politics of biodiversity offsetting and failed environmental market-making in England*, Andrew Lockhart (2017) identified a number of tensions in the policymaking process of biodiversity offsets in England, and in particular tensions between biodiversity complexity versus simplicity, ecological robustness versus political and economic pragmatism, strict rules versus flexible compliance, and strategic planning versus economic incentives. While each tension describes opposing views of the actors involved regarding aspects of the compensations, it could be argued that they also express tensions between modes of valuations, that is the relation between relevant properties of biodiversity and ethical, ontological and axiological preoccupations. They're therefore also expressing divergences in the definitions of the biodiversity that is the object of compensations, and of the validity of certain types of knowledge about it. In turn, these differences in knowledge validity are also taking their roots in the variety of knowledge systems, not only about biodiversity itself but also about the relations between biodiversity problems and solutions in a given social and historical context.

Illustrating this, in Colombia, the offset guidelines were created, according to official documents and some of my interviewees, in order to put some safeguards on biodiversity and, on one hand, to make compensations more consistent, homogenous and efficient to avoid impacts or better compensate them, and, on the other, to provide security to the companies both regarding what they should expect that they'll have to compensate and regarding their legal responsibility. But the tightening of the criteria and the limitation of the 'subjectivity' and of the flexibility (which is feared when institutions suffer malfunction or when corruption isn't uncommon) created their own difficulties, as we will further see in the next chapter. Indeed, quite immediately after the promulgation of the Manual, almost all the actors started, according to their respective positions, to call for the stricter regulation of unclear aspects of the guidelines while demanding as well the flexibilization of other aspects seen as too difficult or counterproductive.

While there are a number of methods of calculation of biodiversity loss and compensation that have been proposed in the world, the problem is that “the more the method is refined, to include not only the area affected but also aspects of ecosystem composition, structure and function, the greater its accuracy and potential for

quantifying the effectiveness of biodiversity offsets; but it also increases the complexity of both implementation and evaluation”* (Murcia et al. 2017).

4.9 Conclusion

Source of pride for many Colombians, the country’s biodiversity is woven into a complex web of issues, struggles and challenges. Presented as the source of potential opportunities, it also relates directly to the daily livelihood of millions of people living in the countryside, many of which in precarious conditions and having suffered from the armed conflict and with a limited access to a land with one of the most concentrated ownership in Latin America. Further weakening of their situation due to the expansion of extractive industries, which products are in large part intended for export, is regularly documented and denounced as going against the national Constitution recognizing the right to a healthy environment and pointing toward a development which has to be sustainable.

As the question of sustainability reconfigured the diverse environmental aspects regulated by the State, the understanding of the national resources to be protected broadened from forest reserves and species of high commercial value, to a wider set of species of flora of interest and then to particular ecosystems and their biodiversity, and to the “ecosystem services” that ecosystems provide. This evolution occurred in parallel to both transformations of the nature of the environment, including its constitution and dynamics, and of the relations, whether of inclusion, dependency or influence, that humans have and maintain with this environment as a whole or with some of its elements. In turn, sets of moral implications and principles were drawn from the articulation between those descriptions, and were used for justifying the legal instruments in which they were stated. In those, the protected elements of the environment were successively considered as being of “general interest”, a “common heritage of humanity” or “strategic”, as having an intrinsic value or finally seen through the interdependence between social and ecological systems.

The necessity of preservation of the “stock” of those newly defined elements of the environment, the resources they represent and their relations to human beings, impacted by a development which was pledging its sustainability, led policy innovators to develop different types of environmental compensations over time. As compensations were designed, they also induced the necessity to consider that what would be compensated was indeed compensable. The installation of a compensation ratio, which hoped to play both the role of deterrent, a guarantor of a fair reparation of the damage, and a way to internalize risks, was thus an enabler of the compensation itself. The analysis of different types of compensations successively put in place showed that not only they each focus on particular elements of the environment, but that thus the same area could be perceived through a variety of properties considered to be pertinent to be valued and compensated. In turn, each of those valuations involves understanding those properties in relation to different preoccupations to which they were linked through causality models deployed thanks to the conjuration of varying scales.

The instigation of the Manual of compensation for biodiversity loss was expressed as being related to both the Constitution, previous environmental laws and development plans, thus basing it on the necessity to preserve a mashup of ecosystem services, natural resources, national heritage and natural capital, and ultimately presenting it in its latest version as being part of the efforts of the State to build peace. Considered to be only a modest component of the conservation strategy of the government, the transformation that the

development of biodiversity offset leads is also qualified as both a game changer and the expression of a paradigm shift by actors considering inevitable the replacement of a natural nature by the artificial nature of the Anthropocene. Nonetheless, this transformation also reflects the extension of the compensability of an environment taken as a replaceable stock of resources to an environment taken as biodiversity related to flows of services, in parallel to the extension from the preservation of national assets to the responsibility to preserve a world-leading biodiversity. Measured through scalable indicators and divided into a “reasonable” number of consistent ecosystems, the nature that now has to be preserved has to become standardizable, flexible and fungible so that it is hoped that its accounting and compensation become fairer and adequate through becoming more scientific and homogenous. The compatibilization of development and conservation thus involve the production of both ruins and compensations of nature-as-artefact.

While this is sometimes described as the lack of recognition of the intrinsic value of nature, and in particular of localized areas, it is actually a transformation of both its perceived tangible aspects and the relations through which they are valued. The delivery of the Manual itself involved overcoming difficult conceptual and technical issues, some of which were resolved at the expense of the representation of the diversity of the country that compensations ought to preserve, or by relying on hypotheses and data defined by their high degree of uncertainty and trade-offs between what was considered to be ecologically grounded and what seemed practically feasible, within the tight constraints of the conceptual frame put in place.

The way through which the Manual has been developed also revealed strong links between the public sectors and NGOs, some of which both advocating for offsets, developing the guidelines for the Ministry of the Environment, helping companies design compensation plans and detaching employees as experts to the Ministry. Companies were also largely involved and their feedback was taken into account in the specifics of the compensations, even if the opposition expressed by some of them did not have the desired effect. Nonetheless, the possibility for describing this moment as a move away from business-as-usual allowed the formation of an instrument constituency involving those actors to promote new modes of governance of nature.

Finally, this chapter showed that the definitions and understanding of virtually all the characteristics used to define the environment that have to be compensated, and in particular those of biodiversity and ecosystems, but also the relations that they have within and between them, were progressively redefined through the successive laws for the protection of the environment as well as those regulating the different ways of compensating what qualifies as an impact. Said differently, the biodiversity that is regulated, protected and compensated does not preexist as such the elaboration of the laws and norms (whether in the forms of formal regulations or conventions, as the next chapter will detail), but is co-constructed along with them in ways looking for putting them into coherency, ontologically, epistemologically and axiologically. Nonetheless, as we will further see, the precariousness of this coherency is continuously challenged, and ultimately redefined, by the difficulties of the practical interpretation and implementation of the compensation guidelines on one hand, and by the emergence of facts and arguments successively put forward by the different actors.

CHAPTER 5

Ethnography of an environmental authority in Colombia

5.1 Introduction

This chapter introduces the last part of my dissertation, which will focus on the work that a multiplicity of actors have to do to produce, evaluate and implement the biodiversity offsets in Colombia through the activation of a variety of dispositifs of management and control always in an unfinished process of becoming, the production and circulation of knowledges in friction with the milieux with which it they become entangled, and the relation between scales conjurations and biodiversity valuations.

This part is based on several months of ethnographic work within the Colombian National Authority of Environmental Licences (*Autoridad Nacional de Licencias Ambientales* — ANLA), in the offices and in the field. It will explore the modalities of coproduction of the “nature”, that the bureaucratic evaluation of biodiversity offsets (through plans, reports, measures and meetings) focuses on and that becomes the object of the compensations, and its dispositifs of management and control. In practice, this involves focusing on the organizational arrangements, normative work and information management procedures through which this coproduction occurs. The observations made will uncover the conceptual, ethical and practical dilemmas, that such a complex instrument poses. While these dilemmas depend on the respective standpoints of the actors, in relation to their milieux and the more-than-human intra-actions that inevitably occur, I will focus in particular on what the dispositif makes to the environmental authority and its employees. Through each section, I will aim to put into perspective the interplay and tensions, as observed through the fieldwork or described during interviews, between processes of politicization and depoliticization, internalization and externalization, normative work and irreducible milieux, objectivization of spaces of calculation and modes of valuation reluctant to commensurability.

In this chapter, I start by presenting the ANLA and replace it within the history of environmental licensing in Colombia. I then describe the licensing process and the critics toward both how it is handled by the ANLA and toward the foundations of the environmental impact assessments, and examine the administrative process

of evaluation, approval and follow-up of the propositions of compensations made by the companies to the environmental authority. I then present the ethnographic fieldwork as well as the reasons and challenges of this methodological choice. Possibilities of doing ethnography within environmental authorities are quite rare, and the access gained was a great opportunity to better understand the practices of evaluation of biodiversity impacts and the application of biodiversity offsetting legislation. Despite being focused on the functioning of an administration, the description and the observation of the relations that its employees weave with the object of their work will not be based on an approach inspired by the sociology of organizations, but stay guided by the questions of the relation between forms of knowledge and the expression of moral statements as part of valuation processes. After having recounted my entry in the administration and the type of activities that I've been able to observe, I describe in some detail the visits I have been able to make with ANLA experts to four separate projects at different stages of licensing and what reveal about the nature of their work.

5.2 Historical background of the ANLA

The legal basis for environmental impact assessments was first established in Colombia in 1974, but it did not become mandatory until 1993, one year after the Rio Declaration and two years after the 1991 'Ecological Constitution', which established the State's obligations for environmental protection, and in particular the protection of environmental diversity and integrity and the conservation of areas of special ecological importance. In this year 1993, the Colombian government created the Ministry of Environment, who also received the charge of delivering the environmental licences. Those were defined as the authorization given by an environmental authority for "the execution of a work or activity, subject to compliance by the beneficiary of the licence with the requirements that the licence establishes in relation to the prevention, mitigation, correction, compensation and management of the environmental effects of the authorized work or activity"^{135*}. The licences would become mandatory for "the execution of works, the establishment of industries or the development of any activity, which, in accordance with the law and regulations, may produce serious deterioration to renewable natural resources or to the environment or introduce considerable or notorious modifications to the landscape shall require an environmental licence"^{136*}.

The Ministry of the Environment became then competent¹³⁷ to evaluate all the projects related to oil and gas, and the following infrastructures when above a defined threshold of size: mines, dams (including hydroelectric), power stations and electric transmission lines, maritime harbours, international airports, irrigation districts. The smaller projects were assigned to the CARs. The Ministry also had to evaluate licences requests for the production and import of pesticides and dangerous substances, projects affecting national parks, transfers of large amounts of water from one river to another, introduction of exotic species of fauna and flora which may affect "ecosystem or wildlife stability", and the production of nuclear energy.

The ANLA was then created in 2011, and inherited from the competences of the Ministry regarding licences, with the goal of rendering the licensing process more efficient, which weakness hadn't been able to effectively limit the rise of pressures on the environment (2014), as well as releasing the ministry from this

¹³⁵ Law 99 of 1993, article 50.

¹³⁶ Law 99 of 1993, article 49.

¹³⁷ Law 99 of 1993, article 52.

task of applying the norms, so that it could focus on policy design. The removal of environmental licensing from the ministry to a public agency occurred at the same time as the creation of many other agencies that took over some of the competences of ministries. Following the precepts of the New Public Management, those agencies took the form of “technical bureaucracies”, which procedural expertise and enhanced transparency aim at countering the accusations of partiality and a more rational administration of risks, therefore reinforcing public confidence in their decisions (Benamouzig and Besançon 2005). This shift was lamented by many as a diminution of the power of the ministry (according to one interviewee working at the ANLA and with a long career in public administrations). But despite its autonomy, the institution stayed in the same building as the ministry, and its director is still appointed by the minister, and is therefore usually changing after each election.

From the beginning, and in accordance with the Stockholm and Rio declarations, the idea of the implementation of environmental licences was that it would be a core supporting administrative instrument allowing the State to fulfil its constitutional obligations as well as the sustainabilization of the “development”. The ANLA pushes further the idea of sustainable development, by using as a slogan that “the ANLA *is* sustainable development”, meaning that it is the cornerstone of this policy at the national level. Its first director stated that “within this concept” it has not only to reach a “balance” or a “fair middle ground” but that its goal is that it would become a “win-win” situation for the development and the environment¹³⁸.

This balance is described in the legal foundations of ANLA’s activity that the institution recalls in each of its decisions¹³⁹ as limits that have to be established, in the form of “obligations that the Environmental Authority, in a discretionary manner, but under criteria of proportionality and reasonableness, imposes on the individual applicant for the Licence, in order to prevent, mitigate, correct or even compensate for the environmental impact that the execution of the work produces”*. The main concepts are thus discretionality, proportionality and reasonableness, evoking the linking and tensioning between subjective judgements and scopes of acceptability. As we will see, they are bound by specific regulations, guidelines and jurisprudence, but at the same time imprecision of the text and unavoidable interpretations give a degree of freedom for their application by the public servants.

The transformations of impact evaluation over the years as well as of the organization of the relatively young institution, along constant changes in the procedures, guidelines and employees, which oblige to see the institution not as static but as a process of ongoing training through efforts of diffusion of knowledge, training, control, feedback, issue finding, improvement, etc.

5.3 Environmental Impacts Assessments and licensing in Colombia

Like in most countries, the environmental licensing process in Colombia is very much defined and the first step, for an organization (whether it is public or private) which has a specific project, is to present an Environmental Impact Assessment to the regional or national environmental authority, depending on the type and scale of their project. The assessments are generally done by specialized consulting firms, working for the companies that are carrying a project, following the guidelines produced by the Ministry of the Environment

¹³⁸ Youtube video “¿Porqué nace la ANLA?” by the ANLA, 18 april 2013. www.youtube.com/watch?v=LPxf07Mpt2A

¹³⁹ See for example ANLA, Resolución No. 00911, 18 de junio de 2018.

for this type of study. Those highly technical guidelines include details about all the different aspects that should be included, how to consider them, to measure them, to present them, as well as general methodology on how to proceed. Impact assessments can thus be considered as a situated process of impacts' recognition and valuation, including identification of concerns and facts that can shed light on them, linking them (with other facts, with humans and other beings, and with ontological, axiological and ethical concerns), and their prioritization.

In the half-century that passed since the invention of environmental impact assessments they've evolved a lot regarding what it assesses in terms of the types of impacts and their extension, how they should be assessed, with what degree of complexity and with what goals. Those shifts, mostly following a global trend led by the USA, stick to the evolution of the perceptions regarding the importance to specific issues and the necessity to include the evaluated projects into wider legal obligations (for example the constitutional rights to a sane environment) or political goals, in particular within the infamous paradigm of sustainable development, which doesn't prohibit new development projects on the condition that their impacts on the "environment" should be "as little as possible", or at least within the parameters fixed by the laws. This inclusion of the EIAs into a wider evolving context also relates to what has been described by Chateauraynaud and Debaz as "the nature of the field of power underlying the production of the environmental assessment" (Chateauraynaud and Debaz 2017).

The Colombian legislation defines the evaluation of environmental impacts as "the process carried out by the environmental authority, aimed at systematically determining, estimating and evaluating the negative effects or consequences for man, renewable natural resources and the environment that may result from actions aimed at the execution of a project, work or activity, which requires the approval of the environmental authority"^{140*}. The environmental authority is therefore the institution in charge of evaluating the quality and the completeness of the information provided by the company and then, based on this information, to decide whether the project is authorized and under which conditions. As expressed above, while this process of evaluation is very much defined, through guidelines and manuals, each project not only has its own specificities and will 'land', along with all its machinery, staff and dispositifs of management and control, in a geographic area which itself has its singular history, properties, dynamics, and power relations, but it has also been designed on one side and will be evaluated on the other by people and institutions with their own cultures, training, sensibilities and interests, and modes and desires of vigilance.

5.3.1 The ANLA in the 'eye of the hurricane'

The ANLA is under a lot of pressure due to a constant critical activity from practically all the actors that are concerned by the licensing process or the projects themselves, including politicians, companies, NGOs, consultants, control agencies and, of course, all the other levels of government, from the regional authorities to the cities, the communities and the individual citizens. While a tremendous amount of criticism is expressed on specific projects, regarding the actuation of companies and the supervision of the ANLA, numerous also concern the institution in itself.

¹⁴⁰ Inciso 2° del artículo 57 de la Ley 99 de 1993, modificado por el artículo 223 de la Ley 1450 de 2011 y el artículo 178 de la Ley 1753 de 2015.

As recounted in a report of the Organisation for Economic Co-operation and Development (OECD), EIA evaluations in Colombia originally had “serious flaws: absence of filtering criteria; poorly defined procedures, including inadequate norms for public participation; and wide discretionary powers given to regulators, which often led to corruption and the use of the rules in favour of certain groups”* (OECD/ECLAC 2014). This was then intended to be resolved in 2006 by a stronger regulation of EIAs and in particular their content and the questions that should be answered, and later by a manual for the evaluators including details on the criteria and procedures to be followed. On the basis of various sources, the OECD also considered in 2014 that the lack of compliance of environmental norms was very high, citing as examples the lack of compliance of emission norms, the fact that three quarters of water extraction activities were done without authorization, and that three quarter of the mines didn’t have a licence to operate, and were related in large part, they noted, to the armed conflict. This aim of a strict implementation of environmental regulations by the environmental authority over a somewhat unmanageable territory often puts them at odds with companies who complain about the bureaucracy of environmental licence. It also puts the authority in a difficult situation in the moments when the refusal to issue a licence is considered: they face complains from the bodies of control if they grant it despite environmental conditions not being met, but a refusal puts them at risk of political pressures, legal recourses from companies. According to one interviewee, it may even open the possibility that illegal activities (in particular in the case of mining) may occur in lieu of the project that intended to be licensed, therefore rendering null the environmental protection capacity of the institution.

Over the years, the ANLA has also been critiqued on many occasions by the Comptroller General of the Republic (*la Contraloría General de la República*), which duty is to supervise its activities, therefore reminding that dispositifs of evaluation and management are not isolated, but part of an ensemble of dispositifs which may superpose or be nested into each other. One video, titled “ANLA does not follow up on the permits it has granted”¹⁴¹* and published on the YouTube channel that the Contraloría uses for the publicization of its actions of control, starts with a voice-over explaining, with an ominous musical background, that “rivers, ecosystems, moors and even the oxygen we breathe are in danger. Children, young people, the elderly and even animals suffer the consequences of inefficient measures to protect the planet. Colombia is in danger [because in] places the inefficiency of environmental licensing is palpable”*. In one case, they continue, “the worst thing is that the ANLA has neither sanctioned the beneficiary of the licence nor imposed fines for non-compliance”* and, in another, “the few fines it imposes are derisory, which makes it cheaper to breach the licence”*.

Another document produced by the Controlaria, which analysed the role of the ANLA in the disastrous construction and commissioning of the Hidroitungo hydroelectric dam, was the opportunity for them to state more general critics toward the licensing process in Colombia:

¹⁴¹ Contraloría General de la República, 2017, *La ANLA no hace seguimiento a los permisos que ha otorgado*, YouTube video.

<https://www.youtube.com/watch?v=aGZ0ksS0UJ0>

For the same harsh conclusions but with a less dramatic staging, see the press briefing No113 of the Contraloria, August 14, 2017: *ANLA no cumple con seguimiento a licencias ambientales, revela auditoría de la Contraloría*.

https://www.contraloria.gov.co/contraloria/sala-de-prensa/boletines-de-prensa/boletines-prensa-2017/-/asset_publisher/y0hpcpbxJNnDG/content/anla-no-cumple-con-seguimiento-a-licencias-ambientales-revela-auditoria-de-la-contraloria

It has become evident, among other things, how weak and vulnerable is the administrative process of environmental licensing, which has lost its purpose and preponderance as a fundamental mechanism for the protection of the environment and natural resources, and its application, in various situations, goes against the general environmental principles that frame the Colombian environmental policy (Article 1 of Law 99 of 1993). The environmental authorities responsible for licensing projects, particularly those that may have a negative impact, ignore the important principle of environmental precaution in cases of lack of scientific certainty, thus prioritizing decisions and interests other than those of the environmental and social sphere. This is how in the last two decades the situation has become more notorious, serious and precarious, which implies greater environmental risks to the Colombian territory, with the help of an Environmental Licensing Authority that does not respond institutionally, administratively or technically to the needs of the country.*¹⁴²

As the ANLA tried to defend itself from the accusations and critics presented in the document, the Contraloría responded by expressing vigorously that most of ANLA's arguments were baseless¹⁴³. A few months later, the Contraloría revised the acting of the ANLA, so to propose a plan for improving it¹⁴⁴. In their analysis of one project, they found that it had been authorized despite being in areas of paramos and reserve, making them conclude that “the Environmental Authority in its follow-up and control functions does not relate the measures that have been taken for the protection of the ecosystem”*. Along the analysis of numerous other projects, the Contraloría almost exhausted the lexical field of the fault, pointing out weaknesses, non-compliance, shortcomings, deficiencies, lack of rigour, lack of diligence, failures, negligence, lack of care, laxity, delays, and untimely or ineffective action, in relation to a variety of domains, among which the evaluations, actions, administration, follow-ups, controls, document reviews, protection of ecosystems or compliance with norms.

Showing disappointment with the evolution of the ANLA, an article of *Semana Sostenible*, published in 2016¹⁴⁵ and which uncovered what they considered to be “several fundamental problems that render this institution at the centre of a controversy”*, surprised a number of actors¹⁴⁶ by its virulence for a newspaper reputed pro-government:

What at first seemed to be the definitive solution to separate environmental licensing from private interests, over the years has become one of the most controversial institutions in the Colombian environmental system. Problems such as the acceleration of the licensing process through the so-called 'express licenses', changes in the working conditions of employees and a vision of the board in which licensing is not seen as a duty but as a simple requirement, have put this institution in the eye of the hurricane.*

¹⁴² Contraloría, 08/2018, Informe auditoría de cumplimiento, Gestión de las autoridades ambientales en el proceso de licenciamiento proyecto hidroeléctrico Ituango MADS-ANLA — Corantioquia — Corpouraba con corte a mayo de 2018.

¹⁴³ Contraloría, 28/08/2018, Comunicado de prensa No. 135, La ANLA sin sustento para responder a la Contraloría.

https://www.contraloria.gov.co/contraloria/sala-de-prensa/boletines-de-prensa/boletines-de-prensa-2018/-/asset_publisher/9IOzephPkrRW/content/la-anla-sin-sustento-para-responder-a-la-contraloria

¹⁴⁴ Contraloría, 09/2018, Plan de Mejoramiento ANLA, Seguimiento a Septiembre 30 de 2018.

http://www.anla.gov.co/Portals/0/documentos/institucional/control/CPM_CGR/33_%20Consolidado%20Plan%20de%20Mejoramiento%20CGR%20Septiembre%202018.pdf

¹⁴⁵ *Semana Sostenible*, 2016/04/13, Anla: una crisis de autoridad.

<https://sostenibilidad.semana.com/medio-ambiente/articulo/anla-una-crisis-de-autoridad/34902>

¹⁴⁶ See for example the article “La desfiguración de la ANLA”, *El Espectador*, 16/04/2016, and which reads “Tan grave es lo que sucede que hasta la revista *Semana*, marcadamente gobiernista, tituló en su capítulo de medioambiente: ‘ANLA: Una crisis de autoridad’”.

In 2018, more than three quarters of ANLA's employees were not public servants but recruited with contracts of one year which may or may not be renewed, without justification, after the yearly review of their activities. One commentary, below the article mentioned above, from an anonymous person who appears to have worked at the ANLA, expresses a view on the relation between the internal tensions, the institutional configuration and its relation to the government:

I am a biologist and I know first-hand how this entity has been permeated by politicking and bureaucrats at the service of the economic interests of the government and mining and hydrocarbon companies. In this entity there is no institutional memory, people who know the processes and do their work in an ethical and professional manner end up being removed because they are an obstacle to express licensing in the eyes of the directors. (...) The problem of the ANLA is not a problem of efficiency of its employees and contractors, it is a crisis of leadership and above all of a government that sees the ANLA and the Ministry of the Environment as a service window of the Ministries of Mines and Finance.*

The licensing process and the environmental authority are also under intense scrutiny and criticism from the part of local communities, social organizations and independent researchers. From the institutional point of view, as expressed during one of my interviews, "ecologists" are simply staying in their role as they systematically oppose projects:

En este país la mayoría de los cuestionamientos que se hacen son, en medioambiente, si se otorgó o no se otorgó la licencia. Si usted otorga una licencia, vienen todos los que: "ambientalistas que no están de acuerdo con el proyecto", por lo general, todos los ambientalistas están en contra de todos los proyectos que se licencian, nadie está de acuerdo con un proyecto. Nunca hemos visto –yo llevo más o menos ya 40 años en el sector ambiental– y nunca he visto un grupo ambientalista que diga: "estoy de acuerdo por este proyecto, es benéfico para el país, le conviene, lo vamos a acompañar". ¡Jamás! ¡Todos los proyectos se oponen! Es, como dicen aquí "es el deporte nacional" nos oponemos a todo. Claro, la normatividad permite ese tipo de participación de la comunidad. De hecho, de los trámites en el país que más tiene apertura para que haya participación ciudadana, es el licenciamiento ambiental, más que cualquier otro trámite. (ANLA15)

In this excerpt, the interviewee complains that the discussions mostly focus on whether to deliver the licenses or not, and that the participation of the communities, which has its place in the licensing process, seem to resume itself to a rejection the projects, and never in propositions to accompany them after having acknowledged that it might be beneficial for the country. But, while the consultations of local communities before the authorization of projects that may affect them largely increased over the years, with different modalities according to the cases¹⁴⁷, they are often considered inadequate, when not simply avoided¹⁴⁸, and the opinions expressed by the community and other participants (professionals, NGOs, municipalities, etc.) are often considered to be not effectively taken into account in the decisions¹⁴⁹. To give one example among many, the newspaper *El Espectador* recounted the "polemics" that surrounded the authorization by the ANLA of a stream diversion by a mining company:

¹⁴⁷ For more details, see the guidelines for participation published by MADS and ANLA: MADS/ANLA, 06/2018, Guía de participación ciudadana para el licenciamiento ambiental, Bogotá.

¹⁴⁸ See for example the case of the harbour extension of the company Cerrejon described in section 8.4.2.3.

¹⁴⁹ This is a point that could be considered crucial and on which it is difficult not to elaborate but, as we will see, the consultation process with regards specifically to compensations is close to non-existent, making it therefore virtually irrelevant for this research. Nonetheless, on one hand it would be interesting to understand how could communities be involved, and on the other it doesn't mean that comments regarding biodiversity compensations are not made by intervening actors during consultations.

As has happened with the issuing of other licences, the ANLA ignored the refusal of the inhabitants to divert the river and the rejection that was given in the public hearings in which the project to expand the La Loma mining project was socialized. Environmentalists point out that this project did not have an adequate analysis of the environmental components affected by the mining operation of La Loma, such as air, water, soil, noise, vibrations and landscape.^{*150}

On the other hand, as the last sentence of this quote shows, the scope of impact evaluation guidelines and analyses have been largely extended over the years, following the translation of alerts that have been historically carried out by actors regarding the importance of certain aspects, substances, activities, dynamics and other elements which emergent tangibility made them potentially recognizable as impacts. But the way they are taking into account is never definitely foreclosed, and actors from all sides multiply the new alerts and counter-alerts, thus diving into what has been referred to as the “bottomless well of the derived alerts” (Chateauraynaud 2020). In addition to their attention to emerging signs, this requires from the part of actors a constant effort of valuation and prioritization of those signs, thus involving much more subtle work than the idea of systematic opposition would suggest.

Another important and often reported issue is the general lack of coercive actions taken by the environmental authority when its decisions are not respected by the companies, whether it concern the project in general or the associated compensations, and the possible corruption that this lack of action may be revealing:

The process must be underpinned by enforcement measures coordinated by the National Authority of Environmental Licences (ANLA), to ensure fair conditions for project developers, through consistent application of requirements across different sectors and regions. Measures should also be taken to counter the risk of companies not reporting biodiversity damage to avoid paying compensation. Experience from other countries suggests that serious work is required to ensure that offsets provide real additionality, that decision-making must be fully transparent to avoid any possibility of corruption, and that effective law enforcement is essential to the implementation of the system.* (OECD/ECLAC 2014)

Indeed, despite the failure from the part of some companies to fulfil the compensation obligations comprised in the environmental licence they obtained, “in approximately 4 years of implementation of the Manual for the Assignment of Compensation for Biodiversity Loss, there is no evidence of legal and economic sanctions for projects that fail to comply with the obligation to implement compensation plans for biodiversity loss”* (Ariza Pardo and Moreno Hincapie 2017). But, as explained by one of my interviewees, the lack of sanctions was also a more general issue. Indeed, the administration’s employees were continually struggling to cope with the work that kept coming at them. Thus, generating additional work by initiating investigative and sanctioning processes was simply not possible, not only because of the lack of lawyers, but also because it would drown out an administration that was trying to limit the bureaucratic procedures that were already severely limiting its capacity to act. In turn, questions and suspicions about possible corruption and political pressures linked to the lack of sanctions create strong tensions on a dispositif pursuing an already unattainable technocratic objectivity.

¹⁵⁰ El Espectador, 20/05/2016, Polémica por aval de la ANLA para el desvío del arroyo San Antonio. <https://www.elespectador.com/noticias/medio-ambiente/polemica-por-aval-de-la-anla-para-el-desvio-del-arroyo-san-antonio/>

Finally, while most of those critics, toward either the ANLA as an institution, the government who influence it, or its employees, are certainly well founded, my dissertation does not try not analyse or demonstrate whether they are actually accurate or not, nor its goal is to understand the reasons behind the harsh dynamics between the ANLA and the Controlaria. The purpose of relating the administrative position of the ANLA in relation to other administrations, the critics against it and its peculiar labour organization, is first to situate within broader dynamics the ANLA and its struggles to actually manage to become the authority it is supposed to be. Following the description of the relations between six types of sociologies made by Chateauraynaud and Debaz (2017), it could be considered that, while aiming at being a remote controlling centre of companies' activities within and in relation to the localized milieux where their projects are implemented, through the technical operation of evaluation and management instruments, the ANLA is itself interacting with numerous other milieux different nature, therefore finally portraying a world where the "clear rules of the game" wished for by institutions, 'users', and employees are meant to be overrun by unruly actors, impracticable norms and emerging alerts and processes.

Secondly, and at a different level, this section also aimed at clarifying the type of dispositif and context within which the employees, which work will be described, have to navigate, that is the multiplicity of dispositifs in which they are caught when trying to fulfil their obligations. In this sense, they find themselves at the intersection of numerous injunctions with their share of contradictions. Indeed, while they intend to do their work well and according to their values, they also have to both apply the norm conscientiously not to face legal prosecution and despite their heavy load of work, fill and demonstrate monthly that they have reached their quantitative goals in order to get paid, and make sure that they do a 'good job' (classically defined in the top-down fashion through the successive hierarchical levels) so to raise their chances to have their contract renewed the following year. Again, the idea is not to find and sort out the 'underlying' motives for their individual and collective decisions regarding projects, but it is nonetheless important to keep that in mind as we focus on some aspects of the evaluation of environmental impacts and their compensations.

While it would be naive to think that the type of bureaucratic organization does not play a role, and that there might exist some level of corruption and, more certainly, political pressures toward the enhanced valuation and devaluation of certain types of impacts and the appropriateness of sanctioning irregularities in the actions of companies, my fieldwork didn't lead me to observe anything close to this. What I've been able to observe though was the strong pressure felt by most of the employees (more accurately called contractors due to the type of their work contract), both due to the constant rush and to the stakes and uncertainties of their activity and of the risks associated with their possible failure (personally and morally, but also legally as well as for their employment).

Not being in the secret of the most controversial decisions of the ANLA, I therefore worked during my fieldwork with a presumption of good faith in the accomplishment of their duties by the employees whose work I was observing, regardless of the pressures mentioned above which weighed upon them, therefore focusing first and foremost on the motives of their actions as they were expressing them. This was also the position of another researcher that I've interviewed, and who told me: "I know people in the ANLA and they are very committed people, people with a great desire to do things well and people who feel this, the responsibility to take care of the country's natural heritage, and to do so without blocking companies unnecessarily"* (Independent1). Nonetheless, the interviewee added, these employees were doing their work

it in a difficult institutional context and without always having the right tools, which is why their work should also be understood in relation these wider dynamics.

5.3.2 EIA vs Pachamama?



Figure 32: Picture of the page of a newspaper (left) with a small article proclaiming that the ANLA actually knew the intentions of the company and another wondering whether the event actually killed the river or not, illustrated by a picture of a protest in form of a river burial ceremony, and a picture of a protest (right) in front of the ANLA to bring attention toward what was considered its mismanagement of the situation.

Near the end of my stay in Colombia, a situation of crisis had started to develop with regard to the latest hydroelectric dam in construction, often called Hidroituango because of its location near the town of Ituango in the department of Antioquia. It had already generated broad and intense oppositions before and during its construction but, as they were about to finalize it, severe issues with tunnels diverting the water have been found. For many weeks there were fears that the dam may collapse, finally ‘forcing’ (this is contested) the company to close the tunnels completely in order to finish filling the reservoir up to the level where the water would overflow the dam and release some of the pressure put on it. This emergency action, done without the approval of the authorities nor of the ANLA, completely stopped the water from flowing downstream for three days, thus leaving the second river of Colombia to almost completely dry up during this period. This provoked a strong emotion and the outcry of the population, some considering it a deliberate ecocide, and the political and environmental authorities have been described as either complacent and complicit with the company or

completely impotent, generating crisis meetings and measures in order to mitigate the ecological damages as well as the damages to their institutional or corporate image¹⁵¹.

As I was in the building of the ANLA doing my fieldwork, observing a meeting with a company presenting their compensation plan, voices of protesters in the street began to make it difficult to hear each other talk. When it finished, I came out of the building and found out that it was a protest (right side of Figure 32) against the handling of the situation by the ANLA and organized by Rios Vivos Antioquia, an organization opposing the construction of large dams, and to which had come people that I had met during other events and that I had interviewed. I therefore found myself a bit caught between my position at the ANLA and my sympathy for the demands of the protesters, and while they knew about my investigation about compensations, I didn't feel like telling them that I was actually just coming out of the building.

During this protest, the discourse of a young lawyer supporting the action of Rios Vivos showed well the articulation they were doing between institutional weaknesses, evaluation of impacts and mobilization from a grassroots organization to take on itself to put forward the 'real' impacts and linked them with ecological and social justice. In front of the building of the ANLA, they also emitted a call toward environmental impacts specialists in order to help them do a participative counter-EIA, or at least to point the weaknesses of the one that had been presented by the company and on the basis of which the ANLA had emitted the environmental licence:

Es irreversible lo que le hicieron al Cauca, el Patrón Mono como lo llaman afectuosamente los barqueros, no va a ser el mismo nunca mas. Ya no es mono porque sus sedimentos se los quitaron, y porque las múltiples especies de peces que habitaban allí ya no tienen las condiciones de vida para seguir existiendo. Entonces este ecocidio hay que llamarlo por su nombre, y es unas de las claridades que les decimos al director de la ANLA y al ministro. Este ecocidio es irreparable. Las acciones de Rios Vivos Antioquia son dirigidas a exigir una reparación integral ambiental partiendo de dos principios: son irreparables los danos y la naturaleza no es monetizable. Cuanto vale tal especie en vida de extinción? Cuanto vale el rio Cauca? No tienen precio! Entonces están destruyendo la vida de miles de familias, no solo de los doce municipios afectados reconocidos en la licencia ambiental sino son mas de treinta municipios de cuatro departamentos que son afectados. (...) Este ecocidio no tiene precedente en la vida del país. Por lo tanto el llamado que hace el movimiento Rios Vivos es que multipliquen esta voz, en los barrios, familias, etc. para que seamos mas conscientes que este ecocidio que ha ocurrido en el país nos esta llevando a una debacle ambiental de la cual tenemos que despertar. La ANLA y el ministerio de ambiente no tienen la suficiente capacidad para atender este grave fenómeno que estamos viviendo, no tienen la suficiente institucionalidad, y menos el presidente que solo esta respaldando EPM, que solo busca salvar una empresa criminal como la llamamos a Rios Vivos. (...) Estas acciones también sirven para sacar nuestra rabia que tenemos, esta tristeza, estos dolores pero ademas solidarizarnos.

¹⁵¹ This event happened at the beginning of February 2019. See for example the article by *Semana Sostenible*, 08/02/2019, *El Cauca no morirá, pero jamás volverá a ser el mismo*.

<https://sostenibilidad.semana.com/actualidad/articulo/el-cauca-no-morira-pero-jamas-volvera-a-ser-el-mismo/42914>

Some of the reactions of the ANLA are described in the interview of its director by the newspaper *El Espectador*, and in which the journalist ironically starts by reminding that he had declared when arriving in the institution that he wanted to "eliminate the uncertainty". *El Espectador*, 10/02/2019, *ANLA estudia sanciones para EPM por hidroituango*.

<https://www.elespectador.com/noticias/medio-ambiente/frente-los-grandes-megaproyectos-no-hay-nadie-que-haga-un-control-director-anla-articulo-838883>

My presence in the institution at the time led me to observe some of the crisis management efforts that were deployed, as well as discussing them with some employees, and which could also have been a very interesting basis more discussing the differences between compensations and reparations, but I've decided to not follow this path here.

Nosotros estamos generando una dinámica de trabajo para toda persona que desde su área de conocimiento y desde su saber quiere aportarle al estudio alternativo de la licencia ambiental, porque si en algo hacemos el movimiento Rios Vivos Antioquia es que, si desmontamos y atacamos y descubrimos las debilidades de este estudio de impacto ambiental, vamos a tumbar la licencia ambiental, que es una exigencia que le hace al consejo de estado. Porque este permiso es un permiso que avala la muerte en nuestro país y no estamos de acuerdo que maten a nuestra mama o al rio Cauca. Entonces todos los especialistas pueden ayudar porque es un estudio bastante complejo. Más allá de esto, queremos visibilizar las afectaciones que tuvieron las poblaciones aguas abajo y aguas arriba de este proyecto, saber las implicaciones que esto va a tener sobre sus vidas, no solo económico sino psicológico¹⁵².

These types of counter-studies had already been put into practice in different ways to contest other projects. All the public consultations that I've been able to observe, directly or indirectly, have been used by local populations to express their concerns with projects, but also by academics, independent researchers and social organizations to contest the EIA according to their own criteria. Differently, a person of Rios Vivos recounted me during an interview (RiosVivos2) that, to oppose the construction of another hydroelectric dam, El Quimbo in the department of Huila, they had first contested the fact that the studies were done by people foreign to the region and who "do their studies with their own methodologies, but which do not correspond to the socio-cultural reality of the rivers"*. To demonstrate the deficiencies of the EIA presented by the company, but also to make this demonstration a mobilizing force in the region, they went to the municipal councils to do workshops about the impacts of the dam:

Hicimos unos talleres y en los talleres nos dimos cuenta que los concejales y los alcaldes no conocían el proyecto, y entonces el primer ejercicio que hacíamos era: "usted, cuáles cree que son los impactos que va a traer el proyecto hidroeléctrico: positivos y negativos?". Y hacíamos una lista de impactos en cartel grande, y ellos felices haciendo lista de impactos, de beneficios. Llegamos a listar en un consejo, como unos 60, 65 impactos en un ejercicio de una hora y les dijimos: "bueno, todos esos impactos que ustedes visitaron: ¿cuántos creen que están tenidos en cuenta en su impacto ambiental?", entonces ellos me decían: "pues todos", y ya sacábamos nosotros la tablita del estudio de impacto ambiental y la contrastábamos y resultaba, por ejemplo, que de los impactos que ellos había identificado, solamente tres o cuatro estaban en el estudio de impacto ambiental; de los beneficios, lo mismo. Entonces ahí les empezó a caer, como dicen los mexicanos, la ficha, les empezó a caer el 20 de que las cosas andaban mal y que eso que ellos creían que era muy bueno, no era como se los habían pintado. Entonces ese ejercicio desde la base territorial, desde los consejos municipales, pues nos fue generando un poco de visibilización y de derrumbar la estigmatización que hemos tenido los opositores a los proyectos, porque nos dicen que somos los opositores al desarrollo, pero las gentes que promueven el desarrollo, que promueven ese tipo de proyectos, pues no son... no tienen claro cuáles son los beneficios que van a tener esos proyectos. (RiosVivos2)

There are numerous examples of the development of alternative analysis of environmental impacts in Latin America, for example through the lenses of Decent Science (Ciencia Digna) or the Epistemologies of the South. The main critique points out the cultural and political basis on which EIAs rely (Serje 2003), and their fragmented approach toward the evaluation of impacts and understandings of socioenvironmental systems that remain based on ideas of human-nature relationships (Guhl 2011). But it has also been pointed out the way they generate non-knowledge about specific impacts that may be considered non-relevant, not

¹⁵² Discourse pronounced during a protest organized by Rios Vivos Antioquia in front of the offices of the ANLA in Bogota on 14/02/2019.

acknowledged, or not part of the procedures, leading to rights violation and socio-environmental conflicts, and limiting access to justice due to the legitimacy given to them by the State, since “the administrative act granting the licence, which should, in principle, guarantee individual and collective rights, has become an instrument of dispossession, repression and ‘legal’ expropriation by means of which the State manages natural resources and at the same time violates rights derived from the environment”* (Munevar-Quintero and Valencia-Hernandez 2020).

After the protest, Ríos Vivos published a work plan¹⁵³ intended for those who would like to be part of their “investigative team to dismantle Hidroituango’s lies”, through the “alternative”, “critical” and “rigorous” analysis of its EIA and of the follow-up that the ANLA was doing of the project. They were also proposing to the researchers, to “support the exercise with approaches from Participatory Action Research, Popular Education, Popular Environmental Education, Latin American Political Ecology / Abya Yala or those you consider relevant”*. They were also specifying that, depicts not agreeing with the vision of the ANLA, and in particular the division of the studies in three components (physical, biotic and social; see section 8.4.1) which they considered to artificially fragmenting the impacts, they were nonetheless proposing to use them in order to be more efficient. Finally, they were being this exercise as a way to support the demands of the affected communities, through the “visibilization of the magnitude of irreversible impacts”*, and articulate this with their propositions of energy transition and the development of communitarian projects that may reinforce their self-determination and sovereignty. During a later interview, I asked one of the people leading this project about their concept of irreversibility and the alternative approaches, and for them, “the issue of irreparability is not like ‘oh, they are hippies who only love the Pachamama’, no, we are talking about the ecosystemic balance of present and future generations”*. But they also wanted to put forward the questions which gained prominence in the field of environmental justice, considering not only the economic and ecological criteria, but also the one of necessity with regard to whom the projects are impacting, what the projects are for, and who they are benefiting.

5.4 The institutionalisation of the compensations

5.4.1 Compensation plans

For companies, the presentation of a compensation plan is a legal obligation. Since the goal of companies is to have them approved, or at least to demonstrate their intention of doing well, they also often try, beyond the presentation of what they are actually going to do, to show that they have well understood the concept of compensation, copying the definition given by the Manual or by the BBOP, that they are aware of the mitigation hierarchy and have applied it diligently so that the compensations are only for the remaining impacts, but occasionally also digress for dozens of pages on ecological theories, elaborating on their take on specific aspects, or on the fundamental characteristics of ecosystems to be taken into account.

¹⁵³ Movimiento Ríos Vivos Antioquia, 2019, Plan de trabajo aguas para la vida, énfasis en el análisis del estudio de impacto ambiental del megaproyecto energético ‘Hidroituango’.

They may also sometimes refer to the “vital importance” that compensations and the no net loss of biodiversity have “for a country with the economic projections in extractive and infrastructure activities like Colombia”, or claim their commitment to a “net gain” for the most recent plans, that the plan is “seeking to maximize the environmental, economic and social benefits of the management and compensation measures related to the use and/or exploitation of renewable natural resources”*, or that it may achieve “the materialization of the Principles of Sustainable Development through the implementation of infrastructure projects, which favour the improvement of the quality of life of the inhabitants of the regions, combining them with sustainable and permanent environmental initiatives”*. They also occasionally present a potpourri of the expected environmental benefits of their actions, one predicting for example “biodiversity gains, generation of ecosystem connectivity between forest relicts, production of oxygen, local water regulation, carbon sequestration and, in general terms, improvement of the biotic conditions of the region”*, therefore mixing scales, biodiversity qualities and cherry-picked ecosystem services.

While in other parts of the EIA they usually limit themselves to the presentation of the results of their studies (except for those including models and calculations, which they have to present), the compensation plans are often a step-by-step description and justification, sometimes with a luxury of details, of the process that led them to choose the specific areas and activities that would finally make their practical compensation proposition.

5.4.2 Process of evaluation of the compensations

I will now briefly describe the theoretical process of evaluation of the compensations by the environmental authority. While being somewhat procedural and technical, it allows to perceive the nature of the work that is done and the type information on which it is based, so to better understand the following sections that will describe some aspects of their practical application.

As expressed before, compensations are imposed to a company as part of the environmental licence of their projects, and they therefore have to include their compensation plan as part of the Environmental Impact Assessment (EIA) that they have to provide to the environmental authority for the examination of their request for obtaining the licence. In general, the plan is evaluated by the ‘biotic’ professional who is part of the team in charge of examining the EIA under the supervision of a leader. But the ANLA also assembled a team specialized in compensations, who is in charge of the most complex projects, of providing support to the ‘biotics’ of the institution who may encounter difficulties in the evaluation of the plans, as well as of answering questions of the companies, developing strategic orientations and organizing internal workshops.

When I wrote to a manager of the group and explained that I wanted to observe their activities, they replied that, for them, it was crucial to understand the work of the institution with regard to the evaluation of the compensations as being composed of five successive periods over the life span of the obligation of compensation. Following this advice, and even if implies a paraphrasing of the categories that the administration built for itself, I also considered that the reader could benefit from understanding the different phases that this procedure encompass: at first is the licensing process and the compensation proposal submitted with the EIA, which describes the ‘remaining’ impacts that are said to be the origin of the compensation obligation; then there is the approval of the compensation plan proposal by the ANLA; this allows the company to carry out the on-site implementation of the proposal; the environmental authority then follow-up the

implementation of the proposal and that was approved; and finally comes at the end the acceptance of what has been executed and the “closing of the obligation”.

The compensation plan in itself comes as a chapter of the EIA presented by the company. It has to follow the methodology of the Manual of Compensations, which also specifies that it should include at least the aspects reproduced in the following box:

The compensation plan to be submitted as part of the environmental impact assessment shall contain at least the following aspects:

1. Identification of impacts not avoided, mitigated or corrected.
2. Objectives and scope of the compensation plan.
3. Preliminary localization of the areas for the implementation of the compensation measures. The detailed areas will be presented in the framework of the monitoring and implementation of the Plan.
4. Information on ecologically equivalent areas for compensation (ecosystem type, structure, condition, species composition and richness, among others) at the most detailed scale possible.
5. Proposal of the compensation actions and expected results including the implementation schedule. Restoration actions shall be presented in accordance with the National Restoration Plan. Criteria for the selection of sites and potential beneficiaries shall be included.
6. Preliminary schedule for implementation, monitoring and follow-up of the compensation actions, identifying the actions, clearly identifying milestones to help determine the status of compliance with the plan.
7. Assessment of the potential biotic, physical, economic and social risks of the implementation of the compensation plan and a proposal to minimize them.
8. Definition of the actions, modes, mechanisms and form of implementation.
9. Operational and investment plan of the compensation plan.
10. Identification of impact management indicators. The information contained in Annex 2 of the National Restoration Plan can be used as a guiding input.
11. Monitoring and follow-up plan based on the effectiveness, efficiency and impact of the compensation programme. This monitoring and follow-up plan will be coordinated with the competent environmental authority and IDEAM. The information contained in Annex 2 of the National Restoration Plan may be used as a guiding input.
12. Long Term Management Proposal.*

According to a presentation of biodiversity compensations by the ANLA¹⁵⁴, the evaluation process of the compensation consists (I simplify) first in the verification of the geographical database (GDB) provided by the company; then a comparison of the layers of vegetation cover of the impacted areas with the maps and satellite images of biogeographical districts, biomes and ecosystems provided by governmental agencies; validation of the biogeographic districts; the calculation of the compensation factors and verification of the correspondence with the calculation of the company and the verification of the ecosystemic equivalency with the dedicated geographical software; verification and validation of the location of the compensation areas and of their physical-biotic descriptions; validation of the type of actions proposed with regard to what the Manual imposes; verification of the tradeoffs, indicators and schedule; and verdict on the proposed plan. The most common issues encountered during the evaluation by employees of the administration are, among a broad variety, the incoherency the geographical information or problems of inadequate or inappropriate application

¹⁵⁴ Autoridad Nacional De Licencias Ambientales, Coordinación de Agroquímicos, Proyectos Especiales, Compensaciones e Inversión 1%, May 2014, Presentation, Manual Para La Asignación De Compensaciones Por Pérdida De Biodiversidad.
http://portal.anla.gov.co:93/documentos/9823_PRESENTACI%C3%93N_COMPENSACIONES_POR_PERDIDA_DE_BIODIVERSIDAD.pdf

of the guidelines of the Manual with regard to the type of actions proposed or the establishment of the ecosystemic equivalency.

A compensation specialist of the ANLA told me that, in the chapters detailing the compensation plans in the EIA that the companies present to obtain an environmental licence for their project, the objective for the companies is simply to present a plan, as the law requires and which approval may be secondary at this stage, while for the employees of the ANLA the objective is to get from the chapter the ecological goals that the compensation is aiming for. The tensions between perspectives over the same instrument or in this case the same document, which can take various meanings and relate to various expectations depending on who is considering it, is also particularly flagrant with the proposed indicators of a follow-up of the implementation, as we will further see.

5.5 Ethnographic fieldwork at the ANLA

In this section I will describe the main fieldwork that I did while in Colombia, that is the time that I spent doing an ethnography of the Autoridad Nacional de Licencias Ambientales —ANLA, a national public institution of almost one thousand people which receives and processes every year hundreds of requests of environmental licence. As this particular inquiry was not my initial intention, I will explain what decided me to turn myself toward this unique fieldwork, how I got access to it, the difficulties that I've encountered and, finally, the type of activities that I've been able to do and observe.

5.5.1 Intention and access

When I arrived in Colombia, in June 2018, my intention was at first to meet people working on biodiversity offsets and then identify and choose a specific project (a dam or a mine for example) on which to focus in order to understand in detail the different actors involved in its development and in particular in the design of the compensations. But I realized that, on the one hand, more than six years after the introduction of the compensation manual, it still seemed impossible to be able to go and visit a compensation project in progress. Various conceptual, institutional, technical and legal problems have indeed caused “delays” (or rather a big bug) in the process articulating the design of compensation plans, their acceptance by the environmental authority and their implementation. On the other hand, following the first interviews that I did, and in particular one with an employee of the ANLA who told me that the institution wasn't in charge of the development of policies nor of their interpretation, but that their role was limited to the straightforward application of the laws, my attention grew toward the work done inside this environmental authority. It seemed particularly relevant for my research to study and understand how these “objective” implementation of the compensation laws and evaluation of the projects submitted by the companies were done in practice. One of my questions was then how an instrument, which is supposed to define an ethical and legal orientation intended to provide clarity but maintaining at the same time a certain confusion, is not only challenged from the outside on its principle but also how it is understood, interpreted and applied from the inside by those who are responsible for evaluating its implementation in particular and all singular cases.

The idea was then to redesign my research from one that would be based on a fieldwork focusing on a specific and localized project, and on the different and opposing valuations of its impacts and their possible compensations, to complementing the interviews that I was planning to do with the study of the institutional incorporation of the biodiversity offset schemes through ethnographic methods, along with further interviews of people inside the institution. For me, this choice would give an opportunity to see how the accuracy of the data, indicators and knowledge related to compensation activities were treated in practice by the evaluators, and how in their work they were separating the relevant elements of biodiversity and circulating between processes of evaluation and valuation.

I've therefore asked the ANLA the authorization to do some observation inside the institution, with the help of a compensation expert of the institution and which I had interviewed. A manager almost immediately agreed in principle, but obtaining the definitive green light turned out to be more complicated than expected, because I needed a formal status and an insurance against injuries to be able to remain on the premises of the institution. The authorization was finally granted to me a few months later but, since the status of researcher did not exist, the only available status was the one of intern. Once my fingerprint was registered and my formal introduction completed, I was therefore allowed free access to the building.

While I was imagining at the beginning that going only to a few meetings would be enough, I quickly realized that every meeting was different, that the number of themes included in the Environmental Impact Assessment, their technical and procedural complexity as well as their relation to laws, norms and guidelines, made that a more extended fieldwork seems necessary in order to be able to understand what the actors were talking about and the milieu in which they were immersed and the issues they were facing daily in order to accomplish their tasks. This also led me to consider that the question of the assessment of impacts was much more important to assess the validity of the compensations than previously thought and I've therefore started to follow the way projects were evaluated in their entirety by specialized groups of the ANLA, and to observe the evaluation of compensations as only a part of this larger process. Another crucial aspect that I had underestimated was the constant reference to the laws that employees of the ANLA as well as of the companies were making. Those were indeed showing the structuring effect, as explicit and predominant normative repertoire, that they have on the evaluation process, on what is requested from the companies, on how it will be analysed, as well as on the relations between the ANLA and the other actors. This importance could seem obvious, since biodiversity offsets are an instrument that is regulated by the law, but my initial approach to understand it from a socio-ecological perspective didn't sufficiently consider that its application would have to be done by the actors by sticking that closely to the guidelines provided by the biodiversity offsets manual. This means that they would do it sometimes regardless of the ecological meaning of their decisions, but also taking into account their obligation as a public servant to follow the law to the letter (at least to its most likely interpretation, as defined by the institution, as we will further see), and that their personal legal responsibility could be involved if they were making mistakes.

5.5.2 Activities and difficulties

I finally started my "internship" at the end of October 2018 by following a group of evaluators working on a licence request for a mine project in the north-west of Colombia, attending first the presentation of the project by the company (in a meeting room inside the offices of the ANLA, with the help of a PowerPoint),

then the meetings in which evaluators of the ANLA would discuss specific issues that they had with the project, then those during which they would prepare the visit to the location of the future project, then accompanying them on this visit for four days, then attending the debriefing meetings and then to the ones dedicated to the preparation of what they call a “meeting of request of additional information”.

This last type of meeting is a very formal video-recorded meeting with the representatives of the company and their lawyers during which employees of the ANLA present what they consider to be a lack of information within the environmental impact assessment and argue that the guidelines allow them to request further information or studies from the company, who will then either accept the requirement or try to argue that it is not necessary, legal or fair. To prepare this “meeting of request of additional information”, employees of the ANLA would first organize one to three repetitions of the meeting (that they call “simulacra”). During these meetings, each specialist successively present to the group, the group leader and the director of the section in charge of the mining sector at the ANLA, the information that they found to be missing, or incoherent or else, and the associated requests that they would like to present to the company, while the rest of the group will comment on the pertinence of this request, its technicalities and its phrasing, balancing its exactitude, legality and comprehensibility. Following this process was extremely interesting since it allowed to witness the various positions that each individual would assume and the ways the relations between the ANLA and the companies have been regulated (and to understand the evolution of these regulations, even if I will not insist on this part). It showed that at each step of a process, that has been presented to me as objective, they’re constantly moments of discussions, explications, oppositions, argumentations and negotiations around the links between the various impacts that will be caused, the qualification of their nature and importance, the information needed to understand them and the legal parameters that will define the obligations and limitations of the environmental authority.

While I wanted to focus on biodiversity compensations, their analysis was in practice intimately connected to the rest of the EIA evaluation and of the licensing process, as well as to other types of compensations. I’ve therefore decided to observe as well activities and meetings not exclusively focused on compensations (I’ve attended for example a workshop on public participation or a meeting with the mayor of a village having a specific request relative to a compensation for water use). On the other hand, when the meetings were about specific compensation projects, it was most of time about a different one each time, except for the few times I’ve been able to follow the evaluation of a particular compensation plan over time. I’ve visited four different projects, and did multiple interviews in which people mentioned experiences about yet other projects. Here again, the idea was thus not to explore and analyse one particular project extensively, but to multiply the points of view and the variety of projects, techniques, analyses, actors and entities.

By the end of the year, it became difficult to keep working with the people of the ANLA because it is the time when their contracts end and during which they have to finish the work they were supposed to accomplish, so that their chances to have their contract renewed could be preserved. But because of a decision of the new director of the institution (nominated by the Ministry of the Environment), who wanted to review the contractualization process completely, it became messier and took longer than previous years (according to employees), causing additional bureaucratic procedures that led the institution to be basically inactive for more than a whole month. During this time, the employees, who are a kind of civil servants who are not contracted with the state’s usual lifetime contracts but with precarious one-year contracts to be renewed at the end of each year, were kept in an uncertainty regarding the fact that they would be reemployed or not the next year. I could

see that this situation, provoking fear due to a prolonged waiting time with little or no information until the last moment (or sometimes no information at all when the contract wasn't going to be renewed) as well as the loss of salary during the transition, caused a lot of resentment against the administration, with unclear consequences on its activities. This was a frustrating period for me too, since I had to wait for the institution to resume the work and that, while I had planned to interview some of the employees, their uncertain status made them quite reluctant to speak with me until they knew for sure whether they would still work for the ANLA or if they had to look for another job. When this was finally resolved, in the second week of February 2019, I started again the fieldwork in the institution but focusing this time on the group of people designated to assess or support the assessment of the compensation plans submitted by the companies.

During my time with the group in charge of the compensations, I faced difficulties for accessing the information regarding the meetings that were planned, their time and location, as well as to be informed of the work that was currently being carried out by the individuals of the group. The issue came mostly from a manager of the group, with whom I had a good personal relation but who was quite reluctant to give me full access to what they were doing. Firstly, and despite the numerous conversations that we had, it was difficult to convince them of the interest for a sociologist to work on the topic of environmental compensations, since it is normally the preserve of forest engineers and biologists, especially if the goal wasn't to help them improve their process. They were also fearful for example that, although their superior had been the one introducing me to them, the director of the ANLA might not have approved my presence or be aware of it, or did not approve it this way or for this type of meeting, or that I might talk at the meetings and that the company might mistake me for someone of the ANLA, and then that this might have legal implications, or personal implications for them, since they would be seen as responsible for the possible negative consequences that my presence would have caused. Another researcher, working on compensations and which did a study with the ANLA a couple of years before mine, had also encountered a similar issue when trying to convince some employees to collaborate in their study:

Ellos no sentían que tenían la estructura legal ni la capacidad técnica para tomar decisiones, pues obviamente que ellos se sentían inseguros, además porque la empresa privada siempre está viendo la manera de objetar las decisiones de los funcionarios cuando no salen a su favor, entonces una objeción de esas puede resultar en una investigación por parte de la procuraduría y puede resultar en que al funcionario lo echan, o termina investigado, o termina involucrado en un proceso jurídico, y pues ninguno de estos funcionarios que están tratando de hacer su trabajo pues quería algo así, quería verse expuesto, simplemente por satisfacer nuestra curiosidad intelectual. (Independent1)

My relation with them slowly normalized, especially after they asked me to write a work plan in which they insisted that I put some clear and quantifiable targets to my internship¹⁵⁵, so that it would be clear that it would terminate (and freed the manager from my presence) after those targets were reached, but I still had to be attentive of what was going on and constantly ask what was planned in the near future.

As I was working with the compensation group, I also realized that the assessment of the compensation plans was done only by analysing the documentation provided and didn't involve any visit on the field of the areas that would "receive" the compensation. While this may theoretically be done by the biotic professional as part of the visit of the project's site during the initial evaluation (before the licence is granted or denied),

¹⁵⁵ See document in Annex.

they generally do not have the time to do it. The compensation areas are nonetheless sometimes visited later during the follow-up visits of the project (supposed to happen once a year but often delayed) by the biotic professional controlling the activities of the whole project, and not by someone who is part of the compensation group. I had the opportunity to go visit compensation sites at various stages of three distinct projects, by accompanying trios of ANLA professionals to projects' follow-up visits in which they would also visit them.

During the ethnographic parts of my fieldwork, at the ANLA's office when some activity was occurring and during the visits of projects, my main activity was to listen and take notes, sometimes about the content of the meeting or the discussions that were taking place, about the context in which they were taking place, or notes relating an informal discussion that I had with one of the employees or that they had between them. This has also been complemented with photos, occasional audio recordings and videos. But, considering the difficulties that I had to be invited at the right meetings or to hear about a visit that would happen, or the possibility to access documents, a good number of my notes are also about my own activities in the institution, like the attempts that I was making to be in the information loop, or to know when would happen meetings or visits, or to get in touch with persons either overbooked or who didn't want to talk to me, as well as about the times I came at the office and nothing special was happening, or during which everyone was busy to fill their end-of-the-month activity report (to prove they had reached their quantitative objectives and without which they would not be paid), and the discussions that would take place during the lunch at nearby popular restaurants. Informal discussions helped me to register the expression of employees' views about what they were doing in general or about specific aspects of their work in different contexts, providing interesting insights.

On top of the activities mentioned previously, I've also dug into archives in order to find EIAs and compensation plans submitted by companies, and the analysis done by the ANLA in response. The sum of those observations is a very rich research material which full description would be difficult and probably inappropriate. Considering the number of projects that were discussed during the months that I've spent at the ANLA, I tried, in this section and in the following ones, to limit their descriptions to a level of detail that seemed relevant to understand the arguments. Still, the projects I've visited are described in greater depths because I considered that excessively decontextualizing them and their compensations wouldn't have allowed the clear comprehension of my fieldwork and of the stakes of debates that were taking place. It would also not have done justice to the richness of the interactions observed and to their importance for understanding the implications of the implementations of offset policies in Colombia.

5.5.3 Observation of meetings and workshops

During my fieldwork, I've also been able to attend a number of meetings between ANLA's employees and external actors. Most of those meetings were not part of a defined step of the licensing process but occurred when external institutions or actors requested them, by sending an email to the generic address used to communicate with the ANLA. As part of its transparency obligations, the ANLA has the legal obligation to answer any question sent to this address and to delegate employees to attend any meeting that is requested by either a company, a group or any individual, without reserve. Meetings are then assigned to a relevant sector

of the institution (compensation, mining, oil production, etc.), whose leader then assigns employees to it. They will know that they have a meeting in their planning but often do not know the reason for the meeting, the company who requested it nor the specific project that they may want to discuss, if it is the case. They therefore arrive unprepared (a preparation they would probably not have the time to do anyway).

A few weeks before going to Colombia, when I was still in France, I contacted the ANLA through this way, to obtain answers to specific questions related to compensations. I was very surprised to receive a meeting date as a reply, without first asking me whether I wanted a meeting nor if I was even able to attend it. By chance, they planned it for the day right after my arrival in the country, and I was kindly received by the leader of the compensation group. Later, having more questions, the same actions led to the same result. Accompanied this time by a colleague geographer, no less than nine people received us for almost two hours. We appreciated very much the opportunity to talk to a large part of the compensation group, but this seemingly excessive attention and extravagant resource management also left us quite bewildered.

From what I've later been able to observe, businesses occasionally request meetings with ANLA specialists to present their compensation plan, hoping to obtain some sort of informal endorsement, trying to convince them of the merits of their approach or to show that they are trying to follow the manual well, despite all the difficulties that this represents. The company's representatives often seem to hope, or consider that it would make sense, that the persons who attend the meeting are the ones that will be evaluating their projects, and are a bit disturbed when they are told that it might not be the case and that their presentation could be quite useless. On the other hand, consultancies might only come because they want to have some advice or expect to resolve some conceptual confusion, as a consultant expressed during one meeting that I've observed:

Hay unas cosas que no son claras y hay unos problemas que estamos encontrando en la aplicación del manual en la vida real. Queríamos preguntar al ministerio también pero no nos han contestado. Hay unos temas jurídicos que no se si ustedes lo pueden manejar, y hay unos temas técnicos de entendimiento del manual.

Normally, the leader of the compensation group would, as we agreed, invite me to the meetings that they consider relevant to me and that are not confidential or involving high-ranked personnel of the ANLA. This limitation was not in itself a hindrance for the type of observations I wanted to make, even if it could have been interesting to see how the meetings went or the director had to make a decision on uncertain projects, even if it is often precisely because of the political sensitivity of a project that the director is obliged to get personally involved and therefore that my presence would have been potentially the most disturbing. In any case, the leader did not feel like taking it upon themselves to even ask if my presence could be tolerated. But they also often didn't invite me, even to basic meetings, as they would "forget" to tell me about it. While hanging around the open space near their desk, I would then open my ears to any reference to meetings happening, or be alerted when individuals of the compensation group were preparing themselves to go to a meeting room. For example, I once heard in the morning a member of the group talking about a meeting in the afternoon with Ecopetrol, the Colombian national oil company, potentially about compensations. Then, as I came back from lunch, I went to see the leader to ask them whether, although they didn't invite me, I could go to the meeting with Ecopetrol. They looked at their agenda and told me: "no, go to this other one instead", talking about another meeting I hadn't heard about, to which they didn't invite me and that I would have missed if I hadn't asked about the other meeting.

The observation of internal training workshops made it possible to see not only how the procedures spread internally but also the choices that had been made when there were problems interpreting the manual and, more importantly, errors that the specialist doing the training had identified in the documents produced by their colleagues and that they wanted them to avoid in their future analysis of the compensation plans submitted by the companies. These workshops are also a time when the specific constraints of the institution are expressed, be they legal, technical, political or organizational.

The concepts related to ecological compensation being relatively new, the number of “errors” of interpretation and application is considered to be still too high for the officials of the institution. However, by observing the discussions it also seems that the generation of divergent interpretations emerges from the vagueness of the concepts on which compensation is based, although the drafters of the compensation manual had the ambition to promote a methodology eliminating as much as possible the “subjectivity” in its application. The concepts at the heart of the compensation methodology are therefore subjected to a contradictory imperative of extreme precision, because otherwise the compensation would not be homogeneous and might become ineffective, as well as of vagueness, otherwise it would be inapplicable or become absurdly complex. Each new detail or constraint integrated into the methodology therefore opens a new grey area at the same time. Depending on the point of view, it therefore integrates all the advantages of its disadvantages, or vice versa.

5.6 Visits of projects

As mentioned before, I’ve been able to accompany teams of ANLA’s employees to four distinct projects that they would visit for distinct motives and circumstances. While I tried to select projects that would best fit my research, the difficulty to obtain information regarding the visits that were planned by the numerous managers of the institution for their teams made that the choice of those visits was also opportunistic. One visit was related to the initial evaluation of a project, that is before the obtaining of the environmental licence, two were follow-up visits, and one was linked to a meeting organized by the ANLA with other actors. Despite being an “intern” at the ANLA, and since the companies are the one paying for the expenses due to the visit, it was considered that it would not be acceptable to pass on the cost of my visit onto the companies or on the ANLA, nor I was expecting or asked for it. I therefore had to pay for my trip (except for one project relatively near the capital and for which the company organized the team’s journey by car) and accommodation expenses, as well as for the meals not provided by the companies. On location, the companies are organizing the transportation to the specific part of the project that the ANLA’s employees want to see, and I was then carried along with them.

In this section I will present briefly the projects, how I came across them and the content of the visits. The visits are then recounted chronologically, so to better describe their organization and the work done during them, but also to show the progression of the understanding of the projects during the visits. I will come back to specific details of the projects, of their evaluations and of the visits, when appropriate during the analysis presented in the following chapters. The same reasons which led me at the ANLA to expand my focus beyond the strict study of the compensations also led me during those visits to not only stick to what only concerned

the impacts on biodiversity in their restricted sense but to also try to see how the professionals were communicating and trying to link certain issues beyond their specific domain.

5.6.1 Visit 1: Sator coal mine

The first project I've been able to visit with the ANLA's evaluators was a project of large open-pit coal mine in the department of Cordoba, in the north-west of Colombia, near the town of Puerto Libertador. It came up as I was following in the offices of the ANLA the work of a group specialized in mining. After having submitted the documents requested for the start of the evaluation by the ANLA, the company requested a meeting in order to present in-person their project to the group of evaluators who would assess its environmental viability, and the leader of the group invited me to this meeting. Soon after, as the evaluators had been able to have a first glance at the project, they organized the visit to the area where the mine was intended to be. On return from the visit, described below, debriefing meetings were held with the rest of the group responsible for evaluating the project, which was too complex to be analysed by just three people. I was also able to observe meetings of preparation of the requests made to the company, to the formal meeting with the company, and to the discussion by the whole group of specific points of the documentation further sent. Moreover, this additional documentation included the compensation plan, which was initially missing, and I've been able to follow the evaluator of this plan as she met with compensation specialists to help her analyse it. I've also been able to do interviews with the person from the consultancy who designed it for the company, as well as with the person of the company in charge of the environmental issues and of supervising the request of the environmental licence.

Following the evaluation of this project ended up being particularly interesting, since I had the opportunity to follow it from the beginning and through the various steps and discussions, up to the final decision of the environmental authority. Nonetheless, while I have been able to attend some meetings prior to this decision, to read the decision itself and to interview some of the people who participated, I haven't been able to witness the final discussions, which took place with the director of the ANLA, and during which it was finally decided not to grant the licence to the company. The authority nonetheless still gives it the possibility of presenting another request for the same project, which they should modify in a way that may allow them to hope that the ANLA would not reject it again¹⁵⁶.

Since the projected mine was in the same region as one of the largest mines of nickel of the world, the Cerro Matoso, I decided to go to the nearby town, Montelibano, a few days ahead of the visit with the ANLA team. I hoped to be able to see by myself, even if in a way that would remain superficial due to the limited time, how local inhabitants, in the town and in villages closer to the mine, were perceiving their startling neighbour. As the visit wasn't planned in advance, I didn't contact the company or other local actors beforehand but, fortunately, I casually met in the town a person who seemed to know a lot about the mine and was happy to talk about it. At the end of a lengthy discussion, during which they expressed without complacency the corruption and violence which plagued the town, the tensions around the mine, but also the

¹⁵⁶ This is called in the language of the institution an "archival" of the request, by opposition to a definitive rejection which doesn't allow subsequent attempts by the company to obtain a licence for the same project in the same area.

numerous transformations and benefits that their hometown received from it, they finally admitted their partiality, since they were employed as a driver by the mine's foundation, institution which is implementing the social activities of the mine.

They then kindly offered to present me to some of their colleagues, as well as to an historian friend and who was much less positive about the consequences of the mine. A social worker for the foundation described the investments that had been done in a hospital and in the schools of the region, as well as the projects that were developed with the communities. One of them intended to make them become melon producers, but it failed because, according to her, of a bad organization of the communities, the fact that they weren't accustomed to plants which required daily care, as well as because of an unsuitable soil. The director of the foundation recounted the projects that they had developed; the evolution of the proliferation of projects toward a more limited number of more visible actions (which happened around a time, in the early 2010s, that I later found to coincide with some of the largest local protests against the mine); and an aim for a higher implication of the communities in the design of the projects, which the melon experience, they admitted, proved to be insufficient. The historian mentioned the total dependency of the town from the mine, economically and politically, as well as the tremendous changes that had occurred over the years, provoking a "transculturation" of the local culture; the double game of the mine, which was playing on its negative and positive impacts; the ongoing pollution of the rivers despite the huge improvements of the mine practices; and the fact that, despite her critical approach, her pragmatism would let her think that she wouldn't plead for the closure of the mine.

The next day, the friendly person I met first helped me find a reliable mototaxi to take me to four nearby villages (San Jose de Ure, Puebla Fecha, Puente de Ure and Boca de Ure), and put me in touch with social leaders that I may be able meet there. I hoped to be able to interview them about their point of view on the mine, with which they had a very difficult relation and which generated, according to them, severe social and health issues that the mine would not fully acknowledge and act on¹⁵⁷. The history of the mine is already several decades long and, over time, it has transformed the region and has been the target of numerous complaints and mobilizations by local communities in order to transform and influence its course.

The following morning I got picked up by the van transporting the team from the ANLA on its way from the airport to the location of the mine project they came to visit. Upon their arrival, the three specialists from the ANLA started to look at maps of the project in order to plan their activities, and in particular what they would like to visit, for the three days they had. From this moment, the company employees were put at their services, so to give them not only the information they may need and accompany them wherever they wanted to go, but also to organize the logistics of their movements, make the reservation of the 4x4 vehicles, load water bottles into iceboxes, and contact the local representatives or communities they intended to meet as well as the owners of the land they would have to enter (since the mine had not yet purchased them). The three

¹⁵⁷ While my visit was opportunistic, since I was in the region, this mine is also well known for the important social and ecological impacts it had over the course of its history. I therefore considered it at some point as a fieldwork possibility, reason why I was particularly interested to meet people who live nearby it. As my focus shifted to a more institutional implementation of compensation obligations, I considered that detailing in more details the controversies and findings that this short visit allowed me to glimpse would not fit into this dissertation. I nonetheless briefly mention it here because I consider it as an integral part of my fieldwork, in the sense that it allowed me to better understand what a mine of this dimension do to a territory, and the subsequent alerts and controversies that emerged as well as some of their trajectories. It was a useful insight to keep in mind while accompanying the ANLA during the visit that would occur in the following days.

professionals of the ANLA, each specialized in one of the three ‘components’, would then split up to focus on their respective interests.

As we departed for the mine site, which had parts of pastures, forest and growing vegetation, I was kindly but firmly asked to replace the short and open shoes, that I used to wear in warm tropical places, by a pair of pants and more suitable walking shoes. The novice sociologist-on-the-field that I was would learn, at his expense and despite his past fieldwork experiences in tropical context, that mining companies and people from the ANLA had stricter norms for working within an unpredictable terrain. As we walked the territory, I nonetheless quickly realized that it was safetywise a very reasonable approach.

I spent the first half-day with the ‘biotic’ specialist, who wanted first to verify the correspondence between the information provided by the company regarding the ecosystems and vegetation cover, based on the observation of the landscape and local survey plots for drawing up an inventory. But beyond the correspondence of the data, the actual existence of the plots and the accurate designation of the tree species, the evaluator also wanted to see ‘by themselves’, that is with their own senses, areas that had the potential, according to the map, in which they had identified specific vegetation cover and possibly their relation and proximity with a stream. When there, they would examine the specificities of the stream and explore the area to identify the species of trees, and in particular the presence of species that had a special status of protection or were of special importance in their view, beyond the characteristics that had been presented by the company, so to determine whether or not the qualities of the area would qualify it as an “area of exclusion”, that is an area where the company would not be allowed to intervene even if the overall environmental licence was granted.

The following day I continued to follow the ‘biotic’ and its accompanying people during the morning, but decided for the afternoon to change and stick with the ‘social’ expert, who was accompanied by the employee of the mine in charge of the social issues and an anthropologist from the consultancy who did the study. Bringing a couple of bottles of soda and some biscuits for the children, as the expert of the ANLA told me they themselves used to do in those circumstances, we went to a village that would be at the external edge of the mine, if it were to happen, and that the people of the company had contacted to organize a meeting with the inhabitants who would like to attend, which appeared to not be many. This was interpreted as an expression of the other and more pressing priorities that they have, and the fact that they may not want to lose time discussing a project that may not come into being. Before hearing their grievance, the person from the ANLA asked the audience what the company told them and what they knew about the project, in order to check if the company had duly respected its obligation in terms of information of the communities: “the idea is to find out what the company told them about the kind of transformation that can happen, and I want first-hand information”*. The expert then tried to see if they really do realize the magnitude of the project. As inhabitants expressed preoccupations regarding air and water contamination, the expert asked them about the results of the studies and monitoring of those, but they did not know. The anthropologist of the consultancy then turned into an acceptologist¹⁵⁸, guaranteeing that the water will come out from the mine clean of chemical products and odourless. Continuing to ask the people present about their worries, the expert from the ANLA also suggested some possible issues, but without saying directly what they were thinking, and not contradicting the

¹⁵⁸ An expression crafted by Chateauraynaud and Debaz (2017) to designate people of a number of professions who, consciously or not, work to convince other actors to enter into existing consultation mechanisms and thus to accept their proposed definition and framing of the issues.

people from the company or the consultancy regarding their imprecisions or the promises that they may not necessarily be able to keep. As we left, people from the company wanted to show the football field they had offered to the community and talked about Christmas events they had organized, using expressions as “make viable”, “give confidence” and “legitimize”. As the community said to be basically landless, the area being in the hands of a few large landowners, I asked the person from the ANLA if doing a sort of land redistribution, as part of the compensations and social activities of the project, could make sense, in particular since it was also one of the goals of the peace agreement. Considering that it would certainly be a good thing, they said that the problem was that, in order to force the company to do it, they would have first to look for and find the generated impacts that may somehow correspond to and justify this compensation, in way backward to what the process of attribution of compensation usually implies.

Back in the mine offices, a closed camp with multiple buildings and accommodations in the outskirts of the closest town to the mine, the people from the company asked those of the ANLA if they could gather, so to do a sort of informal debriefing meeting during which the experts of the ANLA could already delineate their largest concerns about the project, since they hadn't hidden their interrogations during the excursions (see section relative to the relation between the ANLA and companies in the next chapter).

The next morning, I went with the ‘physics’ expert, as she wanted to walk the planned route of the access road of the mine. Our way through a difficult terrain formed of small hills, high grasses and wet areas, bathed in an unbearable heat and sweat, again in the company of a few people from the company and from the consultancy, most of them with their faces completely covered, reminded again the stark phenomenological and physiological differences which exist between the appreciation of a territory through its representations from the comfort of an air-conditioned office and through a position of carnal immersion. Coming across a forest area about which the ‘biotic’ had explained that they would impede the company from clearing it, the ‘physical’ praised the decision, pointing at the trees: “Look! I’m happy we won’t touch it, [the ‘biotic’] said there were sensitive species.”

5.6.2 Visit 2: Quimbo hydroelectric dam

The second project I went to visit, the Quimbo hydroelectric dam, was at the occasion of a meeting organized by the ANLA with the local communities, some NGOs and the local government in order to discuss (in the hope to resolve) the numerous issues associated with the project. While this meeting would not focus on environmental compensations, nor the personnel from the ANLA would actually go visit areas of the project this time, I thought that it would be a good opportunity to understand more fully the controversies that were surrounding this project. On the other hand, this project was also implementing one of the largest compensations in terms of area of Colombia, totalling to about 11 000 ha.

The dam itself has been greatly controversial since its inception. But, since the project went ahead despite the oppositions and a deficient EIA, the initial controversies have transformed and numerous other ones have emerged, focusing in particular on the numerous unaccounted impacts of the project in the region. While the company puts forward its harmonious generation of green electricity and ecological compensation, the Association of the Affected by the Hydroelectric Project El Quimbo — Asoquimbo, has historically strongly opposed the construction of the dam and then contested the modalities of its implementation and of its management by the environmental and political authorities, so to defend the local communities whose voice

wasn't heard. The title of a book written by one of the members of the association, *El Quimbo: extractivism, dispossession, ecocide and resistance** (Calderón 2017), gives an idea of the magnitude of the gap between the different views. Without intending to recount the already complex history of this dam, which was finally built between 2011 and 2015 on the Magdalena River, it could be considered that the intractable situation in which the actors are finding themselves originates in the decision of the then president Alvaro Uribe to do the project regardless of its impacts, and therefore to violate the rights of the local populations and of the environment by subjecting the evaluation of the impacts by the environmental authority, which was at the time the Ministry of the Environment, to this political decision. The similar imposition of dams as a national project had already been experienced in other regions of Colombia, like for example with the dam on the Sogamoso River, leading to the formation of the Colombian Movement Rios Vivos for the Defence of the Territories and of the Affected by Dams, and would again reproduce itself a few years later with the Hidroituango dam on the Cauca River.

The construction of the Quimbo led to the flooding of more than 8 000 ha of fertile land over which worked hundreds of families who had to be relocated in newly built villages with the promise of a piece of land. But the most productive and naturally irrigated land was the one inundated and the company failed to implement successful agricultural projects and, in some cases, to build the necessary irrigation districts, rendering those communities fully dependent from the company's actions and subsidies. Fishers groups are also complaining of the diminution of fish downstream the dam, inhabitants of the degradation of the water quality due to the inadequate removal of organic matter before the flooding, and of the deficient census that had been done of the population, leaving many uncompensated. A big problem for the authorities and the company was that the environmental licence had been very flawed. Indeed, not only it didn't take into account numerous impacts that now had to be addressed in crisis management mode, but it also imposed on the company unwise requirements (in particular with regard to the social compensations done through the donation of land, which was later found to be unavailable in the region in the required quantity and with an adequate fitness for agricultural purposes). Thus, while the company couldn't fulfill some of its obligations, the environmental authority couldn't legally cancel them but also wouldn't sanction the company, despite its duties. On the other hand, some local actors, such as the representatives of Asoquimbo, saw no reason not to take them at their own game and to forego the promised compensation, as ridiculous as they were, especially considering that the company did not wait for an appropriate solution to be found before effectively displacing the people who are now to be compensated.

The meeting, which took place in December 2018 in the presence of the Minister of the Environment and of the regional Governor, was therefore aimed at forming a National Follow-up Commission for the project, which would organize regular encounters with the parties to find agreements. But virulent verbal clashes quickly occupied the assembly: members of the Asoquimbo as well as other local actors and NGOs accused the mediator of the meeting, the ANLA, as being illegitimate and as being both a party (since it was accused of partiality and of having generally done a terrible job at following-up and sanctioning the company) and the judge; they also contested the presence of the company, who only had to execute what had been and would be decided and should not have a voice, especially considering that some local organizations were at first not allowed to enter the room. On the other side, the ANLA and the company was considering those opponents as agitators, giving them little legitimacy to speak for other who they weren't representing and accusing them of impeding a resolution by insisting on the compliance of the obligations mentioned above, and were also

accusing other groups of inhabitants to want to take advantage of the situation to obtain benefits which they shouldn't be entitled to. The situation was therefore the result of years of tensed relations between the actors which included negligence, invisibilisation, resistance, mobilizations, violence, contestations and impositions.

After a difficult start of the meeting, the ANLA was supposed to present the result of their follow-up of the project by using the categories of the EIA, which is cut in abiotic, biotic and social components. But, measuring the electric atmosphere and the inadequacy of their protocol with the expectations of the community, requesting instead an holistic analysis or a focus on the most pressing issues of land redistribution, census and displacements, the representative of the ANLA asked its colleague to go very quickly on the abiotic part, then talk a bit more about the biotic aspect but mostly focus on the social part. The next day, the Governor pointed out "ANLA's immense laxity, which generates deep dissatisfaction and frustration"* , whereas the newly appointed Minister of the Environment, who had come especially for the meeting, tried to recreate hope and confidence by acknowledging the errors of the past while putting forward their "whole new very very technical team".

After this stormy meeting, I stayed five more days in the region to see the dam and its neighbouring areas and villages, to have the opportunity to meet and interview the different actors, including fishermen and relocated families, and to spend one day visiting the forest compensation area (including the tree nursery and different parts of the areas in restoration) guided by people of the NGO in charge of the project (see Figure 33, showing the quantification of the activities undertaken during the first two years of the restoration plan). Despite the richness of these visits and encounters, it would have been too complex to give an account of these here, and I've thus decided to not focus extensively on this case.

Figure 33: Poster exhibited on a wall of the basecamp of the Quimbo restoration project.



5.6.3 Visit 3: Nikoil Condor oil wells

After having talked repeatedly and unsuccessfully to a number of leaders of groups of the energy and hydrocarbon sectors of evaluation of the ANLA, so to know when visits to projects were planned, it is finally by coming across the experts with whom I went to visit the mine project that they inform me of their upcoming departure to do a follow-up visit of a hydrocarbon project. After the discussion I go see their group leader, who accept to let me go with them.

The project is a 15-year-old activity of oil exploration and extraction in the department of Meta, east of Bogota, and is comprised by multiple oil wells, the majority of them having been abandoned after an unsuccessful exploration phase, and a couple remaining in activity. The project received regular visits from the ANLA, and several irregularities have led to repeated sanctioning processes and new obligations, which non-compliance from the company only led to additional requests from the ANLA, which were no more effective than the previous ones and which remained unanswered by the company in recent years. But on this occasion, the main trigger for the visit was a neighbour's complaint about the upwelling of oil in some areas of a pasture, which the team of ANLA had to investigate in priority, along with visiting the other areas of the project. During the drive that took us in the region of the project, one of the experts commented the letters of complaint that the neighbour in question had sent to the ANLA. The expert was saddened by the response by the institution, which she considered to be too legal and appearing to be written by lawyers who aren't interested in the substance of the problem and, as a result, the next letter of the neighbour had been sent through a lawyer, showing the lack of consideration his preoccupation had received.

As we arrived and met with the people of the company, who also came from Bogota for the occasion, the group started to plan for the coming days, with the company warning that some of the wells were more than three hours away from where they would stay. One of the people of the ANLA started, with a careful language, to raise the two main difficult topics, namely why the company was not responding to any of the authority's requests, and what this upwelling problem was about. An employee of the company answered the first one by saying unconvincingly that they had some new data to send to respond to the requests, but that it was in English and that they still had to organize it. For the second issue, they said that they had done some first analysis but that it wasn't yet conclusive. Moreover, a formal complaint had been lodged by the landowner and a trial took place but, the employee added, "since we haven't been condemned, this demonstrated that the company wasn't responsible for the affectation to the community"*.

As the representatives of the municipality were eager to talk with those of the environmental authority about the issues they had with the project, the company had scheduled a meeting between them. Only the 'social' of the ANLA would normally attend this kind of meeting, but the 'social' of the company expressed that it would probably be best if everyone attended the meeting, as the mayor wanted to be heard and needed to be shown interest, therefore acting as a sort of broker between the local authorities and the ANLA. The meeting happened in the small mayor's office, packed with five people from the company, three from the municipality, one local rights defender, the three experts from the ANLA and two from the regional environmental authority. As the discussion the discussion moved toward the issue of the upwellings, which the mayor considered to often occur naturally in the region, people from the ANLA feel obliged to clarify the purpose of a follow-up visit and its process, considering that the municipality staff didn't seem to have a clear

idea about. Looking at them, they wanted to insist that their labour is to do follow-ups and evaluations, that they only revise the information provided by the company but “are not the ones doing the analysis”. They said that they understand that there may be expectations regarding their functions, but the only things they have are the documents sent by the company and, since the company didn’t provide the requested information, they don’t know who took the samples, not they know what the results are, even if the obligations of the company in this regard were extremely clear, they concluded finally looking at the company’s employees.

Reducing even further the expectations of immediate action and investigation, another expert of the ANLA complemented the description of what was going on from the point of view of the institution: “What we must clarify is that, although we have issued an order that requests the company to follow up specifically on this complaint, what we have come to verify is how this has evolved, and how much the company has provided in relation to this, so that when we return we incorporate this in the monitoring of the project to take the appropriate measures if there is any kind of compliance or non-compliance by the company with the requirements that had been established in the order of last year, OK?”* They then tried to express that it would be good to have better communication and coordination between the different representatives of the State, that is the ANLA, the CAR and the municipality, so to guarantee the rights of the local populations and the sustainability of the project, but it also seems to be the acknowledgement of the institutional powerlessness in front of the lack of compliance from the company, and that the situation renders visible. The lawyer of the company then tried to somehow defend their inaction because they consider that they are not responsible, and that going to a private property to investigate and take samples would be a sort of recognition of responsibility, especially in front of the local community. An expert of the ANLA stared at them, displeased by the comment, and replied that they were the ones owning an environmental licence and that the environmental authority made them clear requests that they haven’t fulfilled.

During the lunch, I asked to one manager of the company, who had told me that the production on the sites was quite low, why it wasn’t higher. From what they understood, part of the exploitation had stopped in 2014 because of the fall of oil prices, but the low production was mainly because the Russian multinational who owned the wells at the time was more interested in keeping the discovered reserves of oil instead of exploiting them, because it gave more value to the company. In particular, they said that in the region a higher-than-elsewhere percentage of the wells for which the explorations had led to the successful discovery of oil reserves would in fact prove not to contain the reserves expected or that it would be impracticable to extract it. In a way that reminded me of the description that Anna Tsing make of “spectacular accumulation” (Tsing 2005), it was therefore more profitable for the company to keep the reserves found, which are technically proven to exist even if with a degree of uncertainty, in their books instead of risking having to cross them out by unsuccessfully exploiting them.

In the afternoon, we went to see the well still in activity, after having done the mandatory induction by the company, which ended with a nominative written test with questions so specific that the person from the company helped us cheat by giving us the answers. But the documents with our answers had to exist for insurance and procedural reasons. Two of the ANLA then spent some time trying to configure their GPS with the right coordinate origin, but it was a different model than the one they used to use and they had troubles finding the parameter. In the well area, someone from the company explained their process of extraction, their security measures, where the oil was going and how the contaminated water was treated. The ‘biotic’ from the

ANLA checked the small slopes of grass around the field: it should be maintained so to not be naked, but without too much vegetation because it would be negligence.

The water that comes out the well is then treated and later sprayed above a field down the hill, and the experts from the ANLA wanted to see how it was going. People from the company were happy, because the field was much greener than the vegetation around it which had suffered from drought. Since the field was on a slope, the ‘physics’ from the ANLA decided to go to the lowest part. Once there, they found out puddles of water, and even more below a landslide, which seemed to have the sort of multicolour reflections typical of the presence of hydrocarbons. They thus took some photos and some notes, and decided to explore further the area to understand the geology, the landslide and the water flows.

On our way back to the cars, the ‘biotic’ of the ANLA, who happened this time to be a marine biologist admitting not being at all an expert in terrestrial fauna and flora, started talking to the person of the company in charge of the environmental questions for this project, and said that she wanted to go visit the areas of compensation. The person from the company answered, looking at us: “So you’re the ones I’ll take on an ecotourism tour tomorrow?” Being quite old, the project didn’t have any biodiversity offset obligations but had to implement compensation for forest use and for land use change. As expressed in the ANLA report of the previous follow-up visit, the invasion of the area by “colons” with the intention of raising cattle led to large-scale deforestation over the years, and only relics of forests still exist. The company had planted, around the year 2009, on private properties of the region and after having established agreement with the owners, the number of trees that their obligations were requested. They had fenced them and came every few months so see how they were growing for the three years imposed by the compensation. At the end of this period, in 2011, the trees had grown well and the survival rate was acceptable. They therefore asked the CAR to come to “receive” them, that is to come visit the planted areas and certify the state of the planted trees, but the CAR never sent anyone, despite the company paying for the expenses. They never really knew why, but think it could have been because the CAR didn’t have anyone available, or because they were considering it was the responsibility of the ANLA. The well close to the area having been stopped and the company having maintained the trees for the time requested, they stopped coming. Furthermore, the owner of the land on which the plantations were located no longer had any obligation to the company, and the fence which was protecting the plantations was removed little by little, so to use it elsewhere or to let the cattle and the sheep graze under the trees. Because of this or other reasons, the trees became sick and almost all of them died, so during the next follow-up of the ANLA, when they finally came to check the compensations, they couldn’t accept them. Therefore, for the company its obligations have been filled but, for the ANLA, it was impossible to “close the obligation” as long as they didn’t see, by themselves or through the CAR, trees that had been alive for three consecutive years. This history of trees dying after the mandatory care of three years had been told to me on various occasions, like if it was almost an intrinsic characteristics of those types of compensations, but usually they would have been validated before the die-off.

The next day, we nonetheless planned to go visit the compensation areas, visit which was necessary since the last ‘auto’ of the ANLA was imposing to the company to redo the compensations, and that it had to be verified whether they had done it or not, even if the personnel from the company was assuring that it was not the case. When I said I was interested in the compensations, the person responsible told me: “well, it doesn’t work, nor it gets delivered to the CAR, because the trees that are planted get sick, they have fungi, while the

natural ones are really pretty and in good health. It makes me sad because the company had complied with the three years but we are still here.”* For them, the fact that the trees had died was unfortunate, and they were angry about the result and all the money wasted, but the worse was that, follow-up after follow-up by the ANLA, they had to take the evaluators again and again to the same fields sprinkled with the trunks of the same dead trees. This employee considered that it was really unjust that their compensation work hadn't been validated, and that it really showed a lack of commitment from the part of the regional environmental authority in the follow-up of the compensation projects, as if the company was the one who had to beg them to come to check on the projects.

Figure 34: Compensation area planted by the oil company and now sprinkled with dead trees, as observed during the visit with the ANLA evaluator.



After the visit of a first area (see Figure 34), they tried to convince the ‘biotic’ that it would be a loss of time to go to the other areas once more, given that nothing would have changed since the last visit, except that it could maybe be worse. As the argument didn't work, they then said that to visit them we would have to walk a lot, that it was too hot, that she had blisters on her foot, was tired, didn't want to come back late, that we would have first to drive back from where we came from, that it should have been said before, that it was already the end of the afternoon... The ‘biotic’ hesitated, but finally decided that we should go visit the other areas anyway. The people from the ANLA were caught between their own stubborn procedures and the fact that it was obvious that the company had somewhat complied to their initial commitments, as useless as the final result was.

During the visit of the multiple areas spread out on a hilly landscape, the ‘biotic’ tried to assess very approximately the percentage of remaining live trees, if any. But the compensations were not on any map and,

since the fences were gone, she had to rely on the estimation of the person from the company to know their respective limits. Only one area had the fences remaining and a good part of the trees not dead, so the people from the company were happy to see that finally not everything was gone and they said that for them, considering the state of the other areas, it was a triumph. Maybe the owner was more intelligent than the others, or wanted to keep shade for its animals, or they were gone, since the surrounding areas didn't seem grazed, or they wanted to keep the trees to avoid the landslides too common in those deforested hills.

Despite indices of cattle and horses passing on the other side of the fence, the 'biotic' considered, very roughly by having a glance at the area, that about 50 to 60% of the trees were still alive, a number corrected to 80% by the people of the company, and with enough vegetation between them to expect a survival in time. She also considered briefly the approximative size of the lot, the state of the trees, their height and diameter (from a distance), the species in presence, and wrote those informations, along with the GPS coordinates, down in their notebook. The person of the company said that they had planted as well a tree local called "nacedero" (*Trichanthera gigantea*), and which care water streams, but that its tender leaves were appreciated by the cattle, and that they couldn't see any left here. Finally they considered, saying that it was their own personal opinion, that those compensations in the form of reforestation on the private land, especially if owned by a *finquero* who's only interested in pasture, should not happen, but that it would be done on land owned by a municipality, a community or a school, who would have an interest in maintaining them.

On our way back, we stopped at a restaurant on the side of the road in a small town. The open dining area has a tin roof with false pylons made of concrete in the shape of dead trees, having no branches nor leaves. I pointed this out to the 'biotic' and to the person from the company and jokingly told them that this is really a very nice compensation and that yes this is surely the kind of plantation that the ANLA can receive and validate as compensation. The person from the company found the joke quite funny but also quite pungent, and said laughingly: "So really, you will be able to receive this one!?". The 'biotic' then continued the joke by adding that the trees had indeed a really good diameter.

At the hotel, the 'physics' specialist recounted their day and the fact that there were at least 20 people who went to visit the places where the upwellings were found, and that there were also quite a few angry inhabitants who wanted answers and asked the ANLA and the corporation to take immediate action. But the problem was that what was apparently found was petrol and not crude oil, and that apparently the tank at the oilfield wasn't damaged and didn't seem to be leaking at all, so that the origin of the petrol was a mystery. They added that it was really a "chicharrón", that is the kind of problem that is very complicated to solve, a real headache and an administrative hell that was likely to last a long time.

5.6.4 Visit 4: Motorway between Cartagena and Barranquilla

Following a meeting with a manager of the 'infrastructures' department of the ANLA in April 2019, they informed me of the upcoming visit of one of their groups of evaluation to a motorway near the city of Barranquilla which construction was almost finished, and invited me to a meeting during which the experts would prepare their visit. After introducing myself during this meeting, happening on the rooftop of the building, one of the people that I was going to accompany to the visit described some of the social issues that they encountered with the compensations. One of them is access to land for small farmers, who may know that

they shouldn't cut down the forests to put in cattle, but who won't know how to make a living if they are evicted from their land, where the company wants to do conservation, and that really it shouldn't be seen as a company problem but a country problem.

Starting on general topics, they wondered for example what the responsibility of the ANLA was with regard to the impacts of the licensed projects and, on a more procedural level, how many "minor changes" can a company make to their project and report before these add up to a change large enough so that the authority should ask them to submit a proper request for a licence modification. They then shifted to the issues that the project had, reviewing its history, the numerous resolutions from the ANLA and responses from the company, as well as the reports of the past visits made by other experts of the institution. They focused in particular on complaints lodged with the ANLA regarding a problem with the fauna crossing the road in an area where it passes through a mangrove. Some tunnels had been established under the road for the wildlife, but they found out that a number of species, and in particular a blue crab, hadn't been taken into account in the EIA, due to "bad assessments", and happen to cross over the road during specific seasons, leading to them being crushed, and the ANLA had therefore imposed additional measures and had to go check on whether they had been properly implemented. During the meeting, the experts considered that they should have done studies for each species, including their dynamics and displacements, and said, laughingly: "seriously, how they could have considered that tigrillos [a Colombian wild cat], crabs and monkeys could cross the road in the same way?"*

The discussion continued on the environmental compensations. The 'biotic' specialist presented them to their colleagues, specifying the volume of wood and number of trees that had been authorized to be "intervened" and, for the compensations for biodiversity loss, the types of vegetation cover and of ecosystem, indicating that some areas were secondary vegetation in the dry tropical Caribbean tropical zonobiome in Pericaribbean Cartagena and others were mangrove forest of the Magdalena and Caribbean Helobiome in the Pericaribbean Arid Belt. They finally stated the number of hectares that had been affected and the number of hectares compensated. One colleague asked them when the compensation plan had been approved and through which resolution, and then how long did the company had for implementing it. The 'biotic' responded and then talked about the compensation relative to the mangrove, for which the company, after a first plan which had been rejected by the ANLA, proposed to help a nearby park to restore one of its parts, and that they would do a study of the birds for the park. Worried, a colleague wondered if this study was part of the actions of compensation that the authority had approved, because "I really hope that we didn't accept that they could exchange the loss of an area of mangrove for a study of birds". They were reassured that "what was actually approved in the resolution 470 for this line of action is the restoration of 14,9 ha of mangrove in the park Islas de Salamanca", thus taking into account the compensation factor of 10 which applies to mangroves. But they added that, since the park is further away than the affected mangrove, the municipality who "was affected by the issue of the crabs" was also wondering why the compensation couldn't be done locally instead, but that the Manual was allowing it since it was ecosystemically equivalent and that, even if it wasn't within the area of influence, it remained relatively close. The colleague stated further that the Manual works step by step, and that it is allowed to do the compensation further away if no adequate areas were found in the area of influence, and that "the proposition of the company had already been accepted, and we have to assume that whoever approved it took this into account", and that it is also considered the durability of the inversion, and therefore if it is in a park it gives some guarantees. Following questions about the possibility of forcing compensation closer to the impact, the "biotic" said that the company was arguing that the mangrove where the road passed

and the nearby swamp were in very bad shape and that there were many problems. In particular they were really polluted because of sewage discharges from the city and many poor people lived in or near them. Therefore, they concluded, not all issues could be blamed on the company, and restoring the mangrove of this area and making it survive would be very difficult.

They then looked at the map provided by the company, to understand where the compensation would be exactly:

– Aquí están las 14 ha donde van a restaurar el mangle, y aquí están las coberturas de esta zona. Esta área es de manglar denso, acá ya hay mangle, y entonces lo que van a hacer es enriquecer y, no sé, quizás concertar con el parque para ver cómo van a enriquecer. Pero tienen que demostrar que en términos de área si cubre las 14 ha, pero lo que pasa es que este Manual también permite enriquecimiento, mejoramiento de la diversidad...

– Claro pero me imagino que quedaron definidas unas metas en el plan de compensaciones por perdida de biodiversidad?

– Ellos tenían que corregir unos indicadores, y los mire y estaban todos en términos de porcentajes, y todos son de gestión, como numero de hectáreas saneados sobre numero de hectáreas proyectadas... Pero para medir la efectividad de un proceso de restauración ellos tienen que tener indicadores de diversidad y otras cosas que les voy a pedir.

– Y no les presentaron? Porque los que presentan no sirven...

– Presentaron unos, pero a mí no me parece que todavía cumplan para poder ajustar el proceso de restauración... Entonces la idea seria de hablar con la gente del parque.

– Bueno, trata apenas llegamos de contactarlos. Porque son muy estrictos, y se necesita demostrar que estas 14 ha... Y es que el manglar es difícil...

– Sí, y también puede que el parque les pregunta lo que a ellos les interesa, eso es el riesgo. Porque para el plan de manejo de impactos la compañía tiene otras prioridades, pero nosotros lo que debemos asegurar es el área.

– Sí, y no queremos que se desenfocan con el estudio de aves y que se quedan contentos con esto, porque nosotros lo que les hemos autorizado no es el estudio de aves, sino un enriquecimiento en un área de mangle.

The experts thus discussed the type of mangrove and restoration that was planned, that is the practical actions that would be executed, how they would be executed, whether this was decided in accordance to the park management and whether those activities were in line with the Manual's requirements. They also commented on the goals and indicators that were proposed, and the modifications that could be asked to the company. Nonetheless, their main preoccupations remained focused on the type of activity undertaken and on whether the company could demonstrate that their compensation was fulfilling the very strict "criterion in terms of area" of the Manual and which translated in an obligation of compensation of 14 ha of mangrove that employees of the authority considered they "had to secure".

The rest of the biodiversity compensation, concerning the dry forest, would be "a property clearance for some land that will be given to the CAR who already have a DRMI [Integrated Management Regional District] declared for the area", but the colleague, surprised, asked if they really would just have to buy the land and give it to the regional authority without any other type of action, and it was answered that no, since the DRMI was already a "figure of protection", they would have to do a topographic survey, update the map of the area, check its legal status, buy it and transfer ownership to the CAR, nothing more. But for now they weren't able

to buy them, because what the owners were claiming they owned wasn't coinciding with the registers, so owners should first check whether they can provide proof of ownership in order to update the registers before they could negotiate the price with the company. But it seemed that there was also an issue in the negotiation because the owners were not happy that, in the valuation of their areas, the presence of trees wasn't taken into account (trees which they considered to raise the price of the areas while, when sold to farmers, the opposite is true). There was therefore a risk that the company would not reach an agreement with them, even if the issue of ownership was resolved.

After having reviewed other issues with the road itself, and complaints of communities which a weird road design was enclosing their neighbourhood without exit, they came by quickly on the relation between the 'biotic' and 'social' components with regard to biodiversity compensations. One expert felt that there should be stronger synergies between the two because, in their experience, the community was consistently dissatisfied with compensations that always went elsewhere, while people were strongly affected by the loss of forest areas.

Two days later, we flew to Barranquilla, where people of the company would be waiting for us. The first activity would be a meeting in the offices of the company. In the car, one of the managers of the company tells me that they had a lot of pressure from the national agency of infrastructures who commissioned the road, and that they were therefore trying to have the best environmental strategy possible, that is the most efficient one for meeting deadlines, and that in the end environmental studies were costing more than those of engineering.

Before the formal presentation of the project, its manager and the 'biotic' expert of the ANLA started discussing the compensations and the possible visit to the park, only to find out that there were some administrative misunderstandings over the processes of evaluation of the ANLA. While the second plan of compensation had been accepted by the ANLA, after a first one that had been rejected, the manager said that they had replied to the request that had been made to provide better indicators, and that they were now waiting for the response from the authority with an authorization to start implementing the compensations: "We're ready to start but, since the ANLA asked us some adjustments to the plan, we're waiting for its approval"*.

But for the 'biotic', since they already had the plan approved, there wasn't any reason for them to wait: "from what I read, it's already approved, yes you had to give better indicators and to provide the formal agreement established with the park, but it is approved and you should already be doing it". Since a meeting with the director of the park was planned, she said that it would be the opportunity to discuss those themes and write down the discussions in the report of the follow-up visit, but they still both laughed about the somewhat ridiculous lack of understanding and extreme approach of both organizations to legal risks, leading them to expect to control everything on one side, and wait for the approval of the approval on the other.

The environmental manager for the company then started the presentation of the works of the road, and of all the environmental measures that they took, including regarding the deposit of material, the air, the noise and the trash. While there may be some small issues with the project, it seemed that the relation between the people of the ANLA and the company was much less tensed that what I've been able to observe during the other visits, and I wondered if it wasn't due to the fact that the project had been commissioned and was supervised by another public agency. As the presentation moved to the "management of fauna", in particular in the mangrove area, the company put forward the training they provided to people of the community and their actions of "ecosystem isolation" to avoid people entering in some specific places. A person for the

regional authority then asked about the crabs, also showing a picture, that had been published in a local newspaper, of an alligator stuck in the middle of the road because of the new barriers of protection in concrete, that had been put into place between the two sides to comply with the security norms for these new roads of “fourth generation”, made to avoid accidents between cars but also to impede people to cross the road. One person from the company responds by pointing the manipulation of pictures by journalists, a woman “who complains too much” and flooded the institutions with complaints, the very high cost of all those studies that spurious complaints force them to do, and that the biggest problem is the pressure on natural habitats caused by new housing developments. They also put forward the holes that they had finally made to allow animals crossing the road, after realizing their mistake of putting a concrete wall in the middle of the road; another employee indicated that the problem already existed before (but the wall certainly made it worse); and another expressed that they were monitoring the problems with the fauna, but that the problem with the area was that “people steal everything” and that this had to be taken into account for each measure that they were implementing along the road. One conclusion by someone from the company was that, instead of removing some parts of the concrete wall or replacing it by a hedge, making holes at the bottom of it was a solution that “takes into account both the environmental and the social issues”*.

The person from the company then presented their planned actions of compensations, and how they aimed at respecting all the constraints of the Manual to choose the appropriate area. For the one related to the mangrove, she confirmed that, while studying the different alternatives, they decided that they couldn't do it in the impacted area, which is the Mallorquin swamp, “because there the pressure is very high, in particular with relation to the social part”, but also because of the lack of implication of the State's administration for the recuperation of this area, that a lot of people have “invaded”, which would make any effort of restoration unviable. They would therefore do the compensation in the park Islas de Salamanca, on the eastern side of the Magdalena River. The area was originally largely composed of mangrove, and swamps within it were connected by natural streams which, because of the removal of vegetation on their shores, became obstructed. The swamps started to dry, provoking the death of the mangrove and leaving the space for the bulrush, considered there as invasive, and which is particularly inflammable during the dry season, causing recurrent fires in the park. They would therefore restore one of the streams leading to a swamp, and sow mangrove. The ‘biotic’ agreed, but nonetheless still didn't understand where the 14,9 ha that the company had to compensate were exactly within the wider polygon that the company was presenting, especially, the ‘biotic’ said, “since for the ANLA the compensations are largely based on the demonstration of actions in terms of area”*. The company, on the other hand, was considering that their actions would help to restore an area bigger than 200 ha, and then explain the expected timeline of implementation, before detailing the other line of compensation in the dry forest.

After this lengthy meeting, the experts of the ANLA decided to go to Barranquilla Verde, a public environmental institute of the municipality. The questions to the person who received us were mostly focused on the possible complaints and on whether they had authority over the problematic neighbourhood near the Mallorquin swamp, but the interlocutor wasn't very talkative, and only made understand that basically no one really had jurisdiction over this area of lawlessness. In the car on our way to the next meeting, with the secretary of planning of a town of the metropolitan area, a person from the infrastructure agency, who would also accompany us, mentioned her apprehension that the tunnels made under the road for the wildlife crossings

could be diverted by the community, so that the animals would “end up directly in the cooking pot”*, and that they therefore may be counterproductive for protecting the crabs. In the following meeting, among other problems that the town expressed about the road, the crab issue emerged again, but from another perspective. A person from the township said that they had tried putting a green wire netting to guide the crabs to the tunnels, but that “obviously the animals do not understand the signage”*, so it didn’t work. After being considered as the poor-crushed-crabs, the crabs-dangerous-for-the drivers, the crabs-object-of-complaints, the invisibilized-crabs-of-the-EIA, the crabs-problem-making for the company and the crabs-as-food, the crabs were now becoming the subjects of a difficult interspecies communication through signs which should “make them understand”, or oblige them, to adopt the “correct” behaviour according to one of the parties in the conversation, only looking their “best interest”.

During our late lunch, two people from the Agency of Infrastructures talked about some of the difficulties that were encountered for the compensation on this project and for another section of the road. Sometimes the CAR say that they just want a study of the biodiversity of the area that they want to protect, and other times that “we don’t have any area to propose for the compensation”*, and that finally it feels that environmental compensations are not a priority in a region with a lot of social issues, that it may be better to organize instead workshops or favour sustainable practices, and that finally too many responsibilities are put onto the companies while they should be handled by the State.

On the following day, I accompanied the ‘biotic’ of the ANLA to the Park Islas de Salamanca, on the other side of the Magdalena River, where they wanted to talk to the director and go visit the area where the company wanted to bring back the flow of the stream and do restoration. Before the arrival of the director, an employee of the park wanted to guide us through the ecological path they have created near the park’s reception area, especially important since the majority of the park is a wetland of difficult access, and that they use to explain the functioning of the mangrove to the visitors. The employee, who specified that they were not a guide but an “environmental interpreter”, therefore not reciting a prewritten text but interpreting what they were perceiving as they were perceiving it, described the characteristics of the four species of mangrove trees present in the park and their importance for the birds. One of them, the salty or black mangrove is breathing by its roots and is particularly tolerant to the salinity of the water, making it able to grow on the coasts, extending the land by capturing the sediments present in the water and then preventing its erosion by retaining them. It is called “salty” because, when putting one’s tongue on its leaves, it tastes salty; but it is also locally known as “iguaneous mangrove” because iguanas are fond of its leaves, and the “interpreter” then gave its scientific name as well.

As we continued on the path, a wooden walkway elevated above the wetland, the interpreter wanted to talk more about the mechanism that the mangrove tree has and that “allows it to walk toward its own restoration”, but interrupt themselves to give some context, that is that “mangroves are one of the most impacted ecosystems”. They said that in fact it was impacted since 1604, without further details and immediately jumping to more recent events: “when the construction of the road [which is parallel to the coast and cut the area of mangrove in half] started in 1956 this ecosystem had been impacted. Why? Because at the time they weren’t taking into account environmental impact assessments. So they delimited two fragments, interrupting the water flows to the river and the sea, leading to an hypersalinization which ended-up killing 14 000 ha of mangrove. The park was originally registered with 21 000 ha of mangrove, of which 14 000 ha since died. It

is a whole ecological cycle that died. This ecosystem of mangrove is the second most important of the world, but when it is impacted by anthropic activities the recuperation is difficult...”* They then came back to their first idea and showed how the mangrove tree propagates itself thanks to its viviparous seeds, therefore mixing and interweaving in a couple of minutes characteristics of the trees and their reproduction, historical events putting into relation human actions and ecosystems dynamics, ecological cycles, and global classifications of the importance of an ecosystem, to finally pointing at the baby trees below us succeeding in keeping their leaves above the water surface.

The director of the park met us as we were continuing the tour on the walkway, while her colleague was detailing the problems caused by what they had to consider as invasive species, but also their usefulness as a filter and bioindicator. The director explained that she was late because she had to look after fires triggered, as it was happening at least twice a week, by local cultivators to prepare the soil on fields at the edges of the park. It is a traditional practice but, they continued sighing, that “keeps us beaten up because then all the pressure goes onto the park, which is the one which risks burning down and, even if most of the time it is outside of the park, it is very complicated and we have a lot of pressure, so we have to go there all the time, show our faces, organize ourselves in case the fire spreads, control the activities, it’s tiring”*. The ‘biotic’ of the ANLA then expressed that they wanted them to explain how the restoration process done within the compensation framework will be carried out but also that, from the part of the ANLA, they were especially interested in knowing that the inversions for compensation have durability in time, and so they therefore wanted to know, even though the fact that the offsets were in a park was already a good point, what their projections were, how they would go about the process and what types of follow-up indicators they will use.

As we walked toward their office, the director also mentioned a project of enlargement of the road that goes through the park, considering that it may be a great opportunity to transform the current road, similar to a dyke and obstructing the water flows, into a viaduct, hoping that financial and political barriers could be overcome. But she then recounted us another issue she had to deal with constantly. Since the construction of the road, people have come to install themselves on its northern side and, when the park was created ten years later, its southern border has been set at the limit of the constructions. But, regularly, people try to grab pieces of land of the park and build houses, extending the existing settlements. Being responsible for the integrity of the park, the director has to closely monitor the situation and, each time that a new construction is spotted, to fill a complaint, wait for the judge to pronounce orders of expulsions, accompany the police and try to secure the regained area. But the director said that, in this period close to local elections, people who want to be elected are supporting the people ‘invading’ the park, promising them to later legalize the situation to obtain their votes. But since they are likely to lose, they continued, it will just make the expulsions worst, probably needing to make use of the riot police and the army because of the number of people and the size of the invaded area. They concluded by considering that “this country is really crazy”, and the expert from the ANLA agreed, saying that it was really hard and reminded the number of park employees who got killed around the country in the ultimate years.

In their office, the director explained the work that the hope to accomplish with the help of the company, including removing the sediments obstructing the stream, manually and by employing people living in the nearby community with whom the park has a good relation, in order to restore the water flow to one of the swamps, where they will also plant mangrove trees. They had hoped to do this since 2014, when they worked on a restoration plan that the park had needed for some time.

They then confirmed the analysis presented by the company during the first meeting, regarding the drying of the swamps and the fires provoked by the invasion of the bulrush, but also recounted that in the years 2014–2015 they suffered from a “very very strong crisis of forest fires, it was terrible”*. Those fires were due in part to the uncontrolled expansion of the burning of the cultivated fields at the edge of the park, but also of fires started deep inside the park, by hunters, fishers or people recollecting wild honey and who use the smoke to get rid of the bees, and which had become out of control. One of them took 29 days to finally manage to extinguish it, not only because the presence of bulrush made it easier for the vegetation to burn, but also because, since the swamps and the streams were dry, bringing water to the area was very difficult. This made the restoration of the park even more pressing and, since the fires were largely due to the activities of local people in the park, they decided with the help of a public agency to employ a number of families to start rehabilitate three small streams connecting the swamps. The director considered that those actions gave very good results, although they didn’t really document the process nor verified the progress with indicators. They were hoping to do it with the upcoming project and the park would monitor the area on a long-term basis. But, while the director of the park and the personnel from the company said that they were understanding the critics of the ANLA regarding the type of indicators chosen (which were mostly focused on the length of canal that had been restored, its depth with comparison to an objective, and the number of trees planted and their survival, while the ANLA was asking for indicators more focused on the evolution of the biodiversity), they also said that, since the project, in terms of the company’s involvement, was to last only three years, it would be unrealistic to expect that indicators focusing on the structure and function of biodiversity would show an evolution. On the other hand, managers of the park also wanted to keep indicators simple enough so that they could continue to produce them in the future, instead of having more complex and costly indicators that would be discontinued. The company was nonetheless proposing to do analysis of water quality but their objective and corresponding indicator was not to reach a specific quality but to do 100% of the number of water monitorings planned, which are four in total.

We finally rejoined by boat the area where the compensation activities ought to be executed. We disembarked on the shore of the Magdalena River facing the city of Barranquilla, where there were fields and a few scattered houses starkly contrasting with the industrial harbour and the high buildings of the other side. While the ‘biotic’ of the ANLA already understood the theory of the work that would be done, she told me that she nonetheless wanted to walk along the canal, from its connection with the river up to the swamp, or at least up to where the vegetation permitted it, so to get a sense of what it meant in practice in the place where it would be done, looking at the quantity of water already present, and the vegetation around, taking photos and reporting its number along with the GPS coordinates on her notebook (see Figure 35). More generally she also wanted to verify what the area was like, so to put in relation and compare the descriptions that she had read and that the different actors had made, with what she could observe directly, thus reducing the number of intermediations leading to a certain understanding of the situation.

In the afternoon, we went to the section of the newly enlarged road going through the mangrove, to finally attend the issue of the crossing of the crabs and of other fauna. The ‘biotic’ wanted to verify the type and size of the tunnels under the road and the fixtures that have been put in place to avoid the crabs to go on the road and possibly direct them toward the tunnels. They also asked to see the location of the road signs warning the drivers of the presence of crabs, and wanted to go closer to an area where the mangrove appeared to be denser, where at its border they could observe small holes which were as many clues of the passage or presence of the

crabs. We then entered the mangrove forest, which wasn't inundated at the time, in the direction of the swamp which was connected to the sea, to observe the condition of the ecosystem and the indices of the presence of fauna which may try to cross the road. Among the trees were a number of precarious and seemingly abandoned small wooden constructions, with some plastic and other waste around but also some ornamental plants put into pots made out of plastic canisters or car tyres. About 100 metres in, we arrived on the shore of the swamp, which was quickly becoming more like a bay. The ground was full of plastic waste of all sorts, and the employees of the company accompanying us explained that people of the area were used to come here, and to other places like this one, to get rid of their trash, and the strong wind was bringing them back to the shore without fail. On the other hand, they said that the municipality didn't seem to try to impede it nor to offer the inhabitants other options.

Figure 35: Visit of the canal to be rehabilitated by the company as part of their compensation plan.



We then left the mangrove area to go to the main section of the road, which was in the middle of a dry forest and really looked like a motorway, with its bridges and the transformation of the landscape that had been necessary to flatten it. The ANLA employee wanted to check the state of the vegetated slopes along the roadsides, but the company had been unlucky because no rain had fallen since their plantation, and even the places where some vegetation had started to grow had dried up.

After this quick review, the 'biotic' wanted to make use of the last couple of hours of sunlight to visit the area where the company was implementing the activities that had been imposed as compensations for their

impacts on 19 individuals of threatened (and protected) species of trees and for the affectation to non-vascular epiphytes (that is moss). According to the reports of the ANLA, the first one they had to plant a total of 95 trees of two species, number which was calculated with a ratio of 1:5, and that it was “in order to re-establish the ecological function and environmental services of these species in the Tropical Dry Forest ecosystem”*, and for the second they had to do a reforestation of dry tropical forest of one hectare with a density of 1100 trees per hectares, without further indicating how they had come up with those figures.

In the car, the expert of the ANLA discussed with a company’s employee the pertinency to still have those measures of protection dating from the ’70s over species that are actually very abundant, the expert considering that the compensation only obeyed to normative and legal requirements but not to a real threat. Other species that could benefit from being protected, like the ones on the red list of the Humboldt Institute, were not. But, she said, if they were then the companies would spend all their time doing administrative paperwork to have the authorizations, especially that a number of species are more at risk than before. In this case, she explained that to be able to “lift the protection” the company had to give an approximate number of trees which were hosting moss, with an approximation of the percentage of the trunks that it was covering. Neither them nor the company’s employee were able to say how they were calculating the number of hectares to be reforested for the compensation, but the fact was that the same amount had been given for two different sections of the road although, strangely, the densities of trees that were required to be planted were not equal.

As we arrived on the private property over which were the compensations, we discovered an abandoned and somewhat luxurious country house, with an equally abandoned swimming pool at its side. The person from the company explained that they were thinking that it was probably at some point the residence of a cartel leader, as could corroborate the numerous bullet impact marks on the trunks of the old trees in front of the mansion. After going around it, we passed in front of a decrepit house where a family was living, along with a couple of small parrots in a cage, and went down a small path which was leading to a large board with the name of the company and which mentioned the number of the resolution of the ANLA which gave them the environmental licence and the “ecological restoration of one hectare with endemic species of the dry tropical forest”* that they were implementing. We also met the person in charge of taking care of the fragile young trees recently planted, and who needed to be watered every day since it wasn’t raining for months. They were working for a foundation who had been contracted by the company to plant and take care of the trees, and they were understanding that the area would then be given by the proprietary to the foundation for long-term conservation but they weren’t very sure.

The field was full of well-aligned sticks maintaining the small trees, and the expert of the ANLA asked the carer about the size of the lot, the distance between the trees, their species, their date of plantation, which occurred six months prior to our visit, and their approximate height at this time. She asked to walked around, observed some of the small trees and the extreme dryness of the ground around, and took some pictures of the field (see Figure 36). The person in charge showed the numbers that were on the tutors and which were used to do the reports of the health of the trees. They knew the species of each of them and was happy that less than five percent had died despite the difficult climate of the last months, which was forcing them to spend their whole days watering, starting at six in the morning up to four in the afternoon, so that each of the four thousand plants could receive some water at least once a day. When I asked them if it didn’t feel a bit strange to do a reforestation of dry forest by planting the trees along perpendicular lines, they laughed saying that “yes, it is very precise, it has been done this way but yes, maybe it is a bit too much”*, and the ‘biotic’ of the ANLA

intervened to explain that it was because “for each type of species you need to have a density of sowing, and you generally set an acceptable mortality rate, like ten percent...”^{*} While it could have been understood as being a simple process of rationalization, it was also considered that it may help give the best chances to take good care of the trees. Finally, the ‘biotic’ explained that we did not come to really see the plantation in detail, but rather to get an overview and see very roughly that “yes, in fact we have been able to observe that the company have indeed started the sowing, as they have been reporting, and that the trees have roughly this size”^{*}, and to take some pictures that would not give much information but would themselves support and corroborate what the expert would say in their report.

Figure 36: Visit by the ANLA employee of the plantation compensating for the lift of the protection of species requested by the company building the motorway.



During the next and final day, the ‘biotic’ wanted to reach the areas where would be implemented, or that would “receive” or “serve as”, the compensation for biodiversity loss resulting from the “residual impacts” over 29 ha of dry forest and which, with a ratio of 8, was amounting to an area to be compensated of 235 ha. The company recounts in the document presenting the compensation plan that they have tried but failed to find areas among the ones prioritized by the regional authorities as being of “high importance” close to the project, and that they finally had to extend their search further. As a result, the two lots that they had found were dozens of kilometres away from the road in construction. They were also considering the parts of the contemplated area as being mostly areas “without anthropogenic disturbance”, and described them in the following terms: “As could already be seen in the satellite images, it was confirmed in the field that the level of conservation of these areas is high, totally sustainable to a very rich ecosystem of tropical dry forest, which could be strengthened if perturbations and anthropic disturbances are minimized in order to achieve a sufficiently

mature horizontal and vertical structure for the ecosystem to self-regulate and adapt to the climatic changes that have been generated in the last decades and that will surely continue to occur”*. Considering this, the objective of the ‘biotic’, as they wrote in the visit report, was simply “to verify that the two proposed areas are currently in a Tropical Dry Forest cover in a good state of conservation”*. They told me that they had already checked on Google Earth that the areas in question were mainly covered by forest, but had to confirm the type of ecosystem, reason why they had to go there in person.

Accompanied by a person working for the landowner of the areas, we walked to a viewpoint from where they showed us the line on the hill in front of us from where the first area contemplated for the compensation was starting, and the directions toward which it continued. We could see from far that there were forests, but they explained that most of the more than 100 ha of this property were beyond the hill, and even the use of maps and GPS didn’t really help to make sense of its extent, in part because, as one person said, it was too hot to think, let alone trying to reach it. The ‘biotic’ nonetheless noted the presence of bromeliads, while the local employee explained that the proprietary had cattle had some point but had to remove it when the regional authorities declared a decade earlier that the area had to be protected, and described the water sources of this utterly dry zone, the regular walks that they do in the areas to make sure that no one comes to invade them or to make wood coal, and the nearby ecological paths that the authorities had recently set up for visitors.

As we were driving to see the second area that the company would buy, some doubts started to emerge, not only because we had not been able to get in touch with the owner but also because the property was far from the road and that the long walk necessary to reach it was starting to appear maybe a bit too much after the challenging one we had just done. Arriving at the place where we should have started to walk, the car parked on the side of the road and the employee pointed in the direction toward which we should have gone and described the difficult climb above the hills that we could see a few hundred metres away. The problem is not always to understand where we are and where we want to go, but how these points are connected physically and geographically, and the human problem remains how to get there and what difficulties will be encountered. In the end, both the people from the company and from the ANLA agreed that it would be too hard, especially considering the weather and the previous walk, and all of this to get a result that would not necessarily be interesting. The report would simply mention that we had done a tour of the lots, and that their condition was as expected.

After those days visiting this project, I wrote in my notes that, while the compensation was already a difficult concept in itself, the compensation that would be made in the park was very difficult to imagine as compensation for the mangrove that had been impacted on the other side of the river. Indeed, what was the link that could be established between them? At first, the possibility to compensate in the impacted swamp itself wasn’t considered possible by the company because of social problems. These problems were also said to be coming from wider issues of poverty and urban extension, as well as from the existence of the old road which allowed people to access and to ‘invade’ the swamp area, leading to its deforestation and pollution. Therefore, making a bigger road could actually worsen the problem instead of resolving it. On the other side of the river, issues with the park’s swamps and mangroves were said to come, on the one hand, from the construction of the old road in the middle of the mangrove, which has restricted hydrological flows and also led to the instalment of settlements on the park’s edges, and on the other hand, since it is a national park, from the ambiguous government’s action (or inaction) and the lack of funding for the park’s restoration despite its

RAMSAR classification. Another question that could then be asked is why a compensation should be used for compensating the lack of public funding of the park, and who will ultimately pay for it? In the case of this road, the question is even more ironic since it is commissioned by the State, who benefited from a loan from the World Bank that it intends to partially repay with the money generated by the tolls paid by the users of the road. This therefore relates to what the Minister of the Environment had expressed during its discourse of introduction of the first Manual regarding the financial windfall they were representing, as well as to the fears of other actors that the compensations may have the perverse effect of progressively replacing other types of financing of the conservation.

The compensation of the 1,47 ha of mangrove then comes in this context (or these contexts, depending on how we see it), and it could therefore be considered difficult (or, equally problematically, too easy) to demonstrate the “additionality” of the compensation measures when the commitments to (and struggles for) the preservation of the areas shows such ambiguous and contradictory patterns. This is due to both sides being composed of heterogenous milieux having extremely complex historical dynamics, reconfiguring (both dying and emerging) ecologies along with transversal inter and intra-species biopolitics using dispositifs of various natures, and for which extracting an isolated ‘biodiversity’ component seemed illusory. And indeed, distinct issues that had been caused by the previous construction of roads on both sides of the river, and their historical interaction with a variety of milieux, were orienting the contemporaneous perceptions, grasps and arguments related to the valuations of the impacts and their compensation but also of the link that put them in a dialogic relationship.

Even more interestingly, this dialogic relationship is far from being stabilized or agreed between the actors, and varies according to successive reconfigurations, arguments and hierarchization of the preoccupations, but also of the agency of non-human actors. Actually, before the proposition of implementing the compensation in the park, the company had submitted another compensation plan to the ANLA, but it wasn't approved. The company wanted to help to formulate a management plan for the Mallorquin swamp, but this was rejected, because the authority considered that the Manual of Compensation was authorizing this activity only within public protected areas, and this swamp wasn't registered as such. The ANLA also expressed that in any case the area already had a management plan for the watershed, which would make irrelevant the proposition of the company. Contesting this decision, the company responded that they had done this way because the department didn't count with protected areas of mangrove and that the area showed a “high level of social issues and of intervention, which invalidates any process of land acquisition or of ecological restoration”*, which finally led them to propose in their second attempt to implement the compensation in the park Isla de Salamanca.

To understand this interplay of actors, normativity and valuations even further, it can be interesting to follow some of the latest administrative developments of the road project. In 2020, the company requested a modification of the environmental licence, that is a request of authorization to carry out additional activities that were not previously planned. During the construction, issues had appeared with the water flows, which in one area was causing the inundation of a neighbourhood during periods of heavy rains. It was causing distress among the residents, and there were arguments on whether it was a misconception of the road or of the neighbourhood. In any case the company building the road had decided that it was necessary to capture the water and build a small canal that would divert it toward the Mallorquin swamp, reason why they were asking

for the licence's modification. This short canal would go through the mangrove from the road and toward the swamp, and the company was considering that it would impact 0,17 ha, which was already a problem for the ANLA because the area had multiple levels of protection, including a RAMSAR classification and, while the intervention could only be approved if the Ministry of the Environment were considering the construction as of public interest, it didn't seem to have been consulted.

Regarding the compensation for biodiversity loss, with the factor of 10 that applies to mangrove ecosystems, it would have to be compensated "with an area" (I use here the quotes because while counting in areas may sometimes appear evident, it is often much more problematic than it seems) of 1,7 ha. The company therefore presented a proposition to restore 1,7 ha of mangrove in the park where the previous compensations ought to be done, arguing the ecological equivalency of the impacted area and compensation site, and the fact that there was a "connectivity" between them (similarly to the demonstration that they had intended to make in the previous compensation plan regarding their pertaining to the same "ecoregion"), since they were "receiving their hydrological supplies from the same sources", that is the Magdalena River. While they had said in a previous compensation plan that doing the compensation in the Mallorquin swamp was impracticable because of social issues, they were mentioning in this one that they had evaluated the possibility of buying a piece of land in this area but that it appeared impossible due to "high economic, social and political interests".

During the visit of evaluation of the project done by the professionals of the ANLA (which this time, because of the coronavirus emergency, took the form of virtual meetings and tours through the live-streaming of drone images), they consulted the CAR and local communities, in particular local fishers, and both were contesting the displacement of the compensations to a further area. The CAR in particular had argued that the compensation should be done in the same ecosystem as the one impacted, that the swamp was considered among its priority areas, and that a programme of the city of Barranquilla was aimed at its "full recuperation". The ANLA therefore decided, in a reversal of the position that they had put forward previously, to request the company to "comply with the order of priorities defined in the Manual for the compensation of the biotic medium (numeral 5.3), to select and locate the area to be compensated in the Mallorquin swamp, having as first option the hydrographic sub-area in which the project will be developed, taking into account that it is located within an ecosystem of special ecological importance designated as a RAMSAR site to recover its functionality and improve its resilience capacity, in addition to the mangrove cover of its edge being classified as a preservation and recovery area"*.

This decision, at the intersection of procedural, ecological labelling, ecological system functioning and ecological public policies that themselves relate to various regimes of valuation and various actors and scales, was therefore putting the company in a difficult situation, since it was forcing it to try to find areas of mangrove to be restored in an area that the municipality was already struggling (considering they were trying) to preserve.

In their revised compensation plan, they then analysed their available possibilities for the implementation of the compensation by classifying the relevant characteristics of the lots of the area. They considered the criteria of belonging to the same hydrographic sub-area, to the equivalent biome, if the area has a mangrove cover, if it is within areas of the National Restoration Plan, the level of priority of conservation given to it by the regional authorities and the zoning of the Mallorquin swamp water roundabout done by the Ministry of the Environment. They then gave to each criterion a number of points and mapped the resulting total scores of the different areas around the swamp, in a way reminding the mapping of the compensation factor. They also expressed that they had to renounce to some that had the best scores due to either their difficult accessibility,

their proximity to urbanized areas, or the fact that they were already in too good condition and that restoration wasn't necessary.

This can be put into perspective with the criteria that they had used for their previous compensations for comparing the three options that they were considering. Since those areas were not in the same swamp but in distinct areas kilometres away from each other, therefore changing the scale of analysis and the possibilities of creating distinctions, they had also considered the landscape context, the species richness, the distance to the impact, the social stressors and potentialities for participation, the similarity of hydrological zones, the municipalities, the ecological prioritization by authorities and compatibility with local management plans, the offer of environmental goods and services, and the threats to the long-term permanence of the compensation. While the idea here is not to do an extensive analysis of each of those factors, it shows nonetheless the wide variety of the "facts", and their successive ontological transformations, that aim to be taken into account when comparing the suitability of areas for the compensation, and of their distinct relations with technical, legal, social and political processes that are shaping the knowledges on biodiversity, and how they are made to configure or reconfigure valuation possibilities and specific means-ends articulations.

5.7 Conclusion

The compensation plan submitted by the companies has to follow numerous requirements, going from the identification of the impacts to defining goals of the compensation and methods for reaching these goals. Each are evaluated separately and involve the transformation of particular knowledges and indices into sets of data amenable for being manipulated by the experts of the authority and for their methods of evaluation. The compensation plan and actual compensations are themselves evaluated over time, and future expectations also define the shape that initial requirement may take, and what they should include so to allow the continuation not simply of the compensations, but also of their evaluation. The goals shaping the information taken into account and its form are thus much broader than pure ecological considerations, as are the constraints and valuations to be undertaken, an important aspect being for example the fitness to the procedure. But the goals are not only going beyond ecological considerations but also depends on the preoccupations which actors have in relation to the compensations, and these also shape in return knowledges, constraints and valuations of aspects of the compensations.

Despite being short, the history of the Colombian National Authority of Environmental Licences is already quite tumultuous. Indeed, while the environmental licensing process is very much defined through legal and internal procedures, the environmental authority finds itself confronted to actors and logics exercising divergent pressures. While being an entity separated from the Ministry of the Environment, its management is appointed by the government, so that the decisions taken are embedded into wider political strategies, and is in particular the face of Colombia's sustainable development, and therefore has to both ensure the first term and enable the second. Symmetrically, companies do not refrain from putting forward the importance of the compensations in the plans they submit to the environmental authority for approval, through their relation to a particular context but also through their numerous benefits, which they do not necessarily intend on demonstrating.

While the requirements of the assessments gradually increased over time, limiting in theory the impacts of projects and in particular those that were not previously taken into account through a process of 'sustainabilization', their rightful management in accordance to the legislation also gives the possibility to companies to promote their appropriate consideration, in a way that relates to a particular context and situated modes of valuation, as well as to a given field of power with its asymmetries. Nonetheless, the regulation of the licensing process and of compensations, giving clear "rules of the game", also allows the making of grasps over it by external actors, which may thus contest particular projects or decisions on their own legal and technical terms, for example by soliciting counter-experts to produce counter-EIAs, regardless of their deeper acceptance of the nature of the environment to be protected that those describe, which may be disputed as well.

Institutions like the OECD at the international level or the Comptroller General of Colombia widely criticized on various occasions the decisions, actions and inactions of the ANLA, and particularly its lack of sanctioning of the non-compliance of companies with their licence, as well as the organization of the institution in itself, including working and contracting conditions of its employees. The contestations of particular projects, within, outside or in opposition to established procedures, and the publicity that some of the projects (or the disasters that they caused) receive, also put a constant pressure on the institution, which therefore faces contradictory injunctions and demands from oversight parties and actors wanting to weight on its decisions. In the analysis, all levels of critique appear, from the government to the management of the ANLA to its technicians or to the companies.

Thus, on their side, employees of the institution have to cope with both organizational issues, a constant normative evolution and the perilous involvement of their personal responsibility. The dispositif to which they participate is also part or in relation to other dispositifs aiming at controlling and conforming its own acting, and is also subject to the twists and turns of the causes unfolded and unfolding in the Colombian society. Therefore, the abstract world managed by ideal norms and bureaucracy is continuously confronted to the frictions caused by heterogenous milieux in interaction and the emergence of new alerts disrupting the 'normal' functioning of the dispositif.

In order to enable an analysis of those relations, I've thus decided not to conduct a fieldwork focusing only on a particular project or compensation, but to follow the work of the Colombian national licensing authority, as an institutional output but also through the work of its employees and in particular the labor of the group specialized in environmental compensations. This allowed to focus on a multiplicity of projects as they were passing through the dispositif (or that the dispositif was aiming at getting a hold onto them) at various stages of their development. Thus the study became less concerned with the projects themselves than with the dispositif, its components and mechanisms, the objects over which aims at getting a hold onto, and what this relation did to both the dispositif and its objects as matter of facts and matter of concerns.

In the description of the course of my fieldwork, I've put emphasis on what I've been able to observe and on the related fact that my fieldwork was also subjected to the perturbations running through the institution, and that I myself became a potential perturbation in an administrative organization which was struggling to keep under control what its procedures were targeted at. In a way topical to ethnographies, I therefore had to continuously balance between distance and closeness with the institution and its employees, and the employees themselves were unsure about my role and the relation they should establish with me. My position was sometimes uneasy, not only because people in the institution were not always particularly cooperative for

helping me get access to meetings and visits due to the perturbations I may cause, but also because the fact of being 'embedded' within the institution felt like I was taking its 'side', that is the side of the dispositif aiming at being hegemonic, in lieu of the pluralists and counter-hegemonic currents and alternatives over which pragmatic sociologists like to put emphasis. The next chapters will nonetheless relativize the hegemony and uniformity of the dispositif by showing the critical operations undertaken by actors to defend, transform or contest norms which application can never be resumed as being a simple transposition.

The fieldwork undertaken thus focused on how particular interactions both actualize the dispositif and challenge it at the same time, and articulated the dialectical relation between the macro and the micro through the observation of tensions between homogeneity and heterogeneity in the practice of actors. Those emerged not only with regard to the procedures but also in relation to the linking of knowledge and preoccupations about the environment taken under a myriad of lenses.

During the visit of the mine project, the social of the ANLA seemed both concerned by hearing the concerns of the local communities as well as to check that they had been correctly informed and were actually understanding the project well, thus checking the information given by the company about their transmission of information. The visits showed that local actors were often quite divided or even ambiguous about the projects, due to a precarious situation which made them hope for an improvement, the projects like mines or dams potentially generating both economic opportunities and risks. On the other hand, they understand projects, even in their preparation phase, through the history of the relation that the company created with them and through the events (relative to a particular projects or projects that can be compared to it due to a geographical proximity or a similarity) that can either show a transformation or create precedents used to shade light on current developments. The experts of the ANLA, which were most of the time newly assigned to a project, even when it wasn't recent, were also inheriting of the relation built between the ANLA and the companies (over which I come back in the next chapter), as well as with the local people and institutions, and also have to deal with the relations that other actors established between them and the role that the authority is understood to have in these relations. They were thus not just individuals, but also the representatives of an institution with an history leading other actors to various levels of trust in their honesty or capacity to protect the environment or to not excessively impede their activities, depending on the points of view.

Finally, the detailed account of the visits to project in company of employees of the ANLA showed the extreme complexity irrupting from the territory when a closer look was given at it, and that measures of contention to make it fit into predefined space of calculation were irremediably threatened to fail, forcing to transform the regimes of valuation. It was also shown the processual nature of the co-emergence and redefinition of problems and solutions, which were subjected to the constant emergence and transformation of new data and put in tension by the necessary articulation of the regimes of proof. In practice, the visits were constrained by the time available, which impeded an exhaustive control, the difficulty to access to some places, but also by the capacity to take into account a variety of factors and relations which indices may either come from a model, from comparisons or from the experience (through senses but also imagination), and which thus consists to render tangible elements which would respond to particular preoccupations regarding the 'environmental' impacts of the project. Nonetheless, it was also shown in a number of occasions how the levels of detail of the required information were adjusted with regard to their fitness for purpose, which was therefore constantly putting forward the processes of valuation of the 'right' purpose of the data recollected and analysed.

In the end, the facts that are produced, transformed and evaluated as part of the process are also subjected to continuous epistemic and axiological destabilizations, forcing actors keep on reinterpreting indices and contexts, as the next chapters will further explore.

CHAPTER 6

Knowledge circulation and friction within an evaluation dispositif

6.1 Introduction

As compensation norms get promulgated, they impose themselves over the actors who either have to design compensation plans for the projects they want to license, as well as those who are in charge of safeguarding the environment through the safeguarding of the appropriate application of the law. When companies aim to apply the compensations guidelines so to design and propose their compensation plans, they justify the choices that they make with regard to what they understand the constraints and by putting forward information of diverse types and their successive interpretations. In doing so, they also often describe what they perceive as the main obstacles to a success that always seems to be put off. On the other hand, the national environmental authority, embodied in its employees and their interactions, produces evaluations of those plans according to the norms, but those evaluations also become situated articulations of facts and preoccupations of diverse nature by those performing them. Thus, focusing on moments in the evaluation of specific cases will allow describing the various processes of valuation that occur during the assessment and framing of impacts of a project by different actors, and how those relate to the production, visibilization and hierarchization of specific forms of knowledge and uncertainties.

On the basis of the ethnographic fieldwork done within the offices of the ANLA as well as of the interviews done with its employees, employees of companies requesting a licence for their project and consultant accompanying them in the process, this chapter focuses on how the actors articulate and express what it means to have to articulate the normative abstraction of biodiversity offsetting with its situated practice. It will therefore be detailed the various ways through which are produced valuations of the relations that are established (through processes of interpretation, translation and putting into calculation) between the generic norm and specific projects on one hand, and between those projects and their bearing to ‘reality’ on the other.

A description of the process of evaluation of the compensation plans will then show how specific issues get through bureaucratic institutions and are treated by them according to their organizational structure. The goal is to understand how the procedural order and actions, including the way they were designed and how

they are taken over by the workers who have to render them materially effective in specific situations, impact the processes that they are said to be taking care of. But, the problem to achieve that is, as Chateauraynaud and Debaz (2017:505) clearly express with a point of irony, that it is unavoidable to have to dive deeply into them, with the risk of losing focus, and to describe them with a great level of detail in order to somewhat render intelligible the ways through which frames, rules and dispositifs become effective. Thus, the descriptions and quotes that I've chosen to include here do not intend so much to describe the process in itself, although this is sometimes necessary, but to focus on what is at play and at stakes during each of those moments, and how the actions of the actors both embody and contest the procedural order which gets imposed into them.

The position that each actor takes in relation to the application of the norm is rendered particularly visible in the interactions between the environmental authority and the companies. This relation takes various forms that varies between the most formal documents approved by the respective lawyers of each side to more informal discussions during visits of the projects and during meetings. The analysis of the exchanges taking place will allow to understand the type of problems that emerge and their modes of resolution, as well as the roles that each actor takes during specific interactions.

Finally, since the concepts and interpretation of the offsetting norms and guidelines were posing numerous issues to actors who often felt disorientated and in situations where they have to somewhat guess what the norm is requiring from them, an important work has to be done inside the institution as well as with external actors to try to align the different interpretations. This chapter will thus also examine the difficulties posed by the concepts of equivalency and of no net loss of biodiversity, as well as by the choice of appropriate compensation indicators and the valuation of ecosystems according to their context, so to show how the norm is discussed and interpreted in practice, how specific interpretations are privileged over others and why their dissemination is an ongoing process which cannot but always stay incomplete.

6.2 Organization and verification of the information, in the offices and in the field

This first section aims at describing the different modalities through which the employees of the ANLA process the documents provided by the companies and the information they contain, so to be able to emit an opinion about them which would ultimately serve for validating or rejecting the propositions.

The basis of the work of the employees of the ANLA is the evaluation of the accuracy of the data provided by the company by comparing it with other sources and legitimate methodologies, and then of the analysis and propositions of the company by putting it in relation to what the norm requires. But the employees of the ANLA may not always compare or put into perspective the information with the “right” reference.

For example, during the analysis of a compensation plan by a small group, one employee of the ANLA consulted the document produced by the institution to grant the environmental licence to the company for its project. In one place, they found a sentence where the ANLA (through the people who collaborated to write the document) was referring to the norms the company was claiming that it had to respect, and then commented to their colleagues with a tint of despair: “The ANLA says that ‘the company says...’, so the ANLA relies on what the company says, instead of relying on the norm!”*.

Overall, during their assessment work, the employees of the authority seemed to continuously look for spatial, temporal, procedural and informational coherencies, that is to try to find isomorphisms between what they were observing and relevant points of reference, whether through their senses or in their data, procedures, guidelines or norms.

Of course, a lot of the work was also done by specialists by themselves, in particular the writing of the final document, and it was difficult to accompany an employee during those moments, especially that they would often do this kind of solo work at home. Fortunately, in some occasion the analysis was not the task of a single worker but one that had been assigned to a pair, which would therefore meet to do the work together, and I could therefore observe the meeting. In numerous occasions during my fieldwork, the compensation group of the ANLA, which includes one expert in cartography, also received requests for help with the analysis of compensation plans that generic biotic evaluators, sometimes with a limited knowledge of compensations, had to evaluate as part of the initial assessment of a project. To provide the requested help, a meeting would then be set up with an expert of the group to allow the evaluator to describe the project, explain their doubts regarding the accuracy or quality of the information provided, as well as its correspondence to the requested standards. When I've been informed that some of those meetings were taking place, or that I simply found out about them since they were happening in the open space of the offices, it provided me the opportunity to observe the analysis and the discussions as they were taking place.

During those meetings, the employees could then exchange their considerations regarding what the information they were able to consult and interpret may say about the biodiversity impacts or the compensation project, and how it compared with the guidelines and requirements of the manual, so that they may finally take a critical stand of the proposed actions.

While focused on a specific project, the meetings also gave the opportunity to the employees to exchange about the compensations in general, and about specific details which may not be clear or about which they want to express a comment or know the opinion of their colleague, as can be seen in the following extract, which took place at the beginning of a meeting:

Expert 1: Estas compensaciones se hacen solo para espacios naturales?

Expert 2: Si, es un enfoque muy a habitat.

Expert 1: Y la fauna?

Expert 2: Pues si usted ve que hay una afectación a un animal particular, podemos hablarlo.

Expert 1: Los planes por perdida de biodiversidad son casi los más complejos a evaluar. El tema es que son escalas de tiempo mucho mayores, y escalas espaciales también. Hay también el problema para los estudios de comprobar cuales son las especies impactadas, cuantas...

Expert 2: Pero el ministerio dijo que siguiendo esta metodología se iba a garantizar la no perdida [neta de biodiversidad].

Expert 1: Si, porque demostrar una cosa o la otra es casi imposible. Y también hay el tema del paisaje, que es muy complejo, porque puede ser de la forma, o solo de la percepción...

The discussions happening during those meetings also gave the opportunity to the employees of the environmental authority to verify together their understanding of the indications of the Manual, and then see whether this was corresponding with what the company seem to have understood and concluded for their own analysis of their obligations of compensations or the way they proposed to implement them.

6.2.1 Verification of the vegetation cover

A first step in the assessment by the environmental authority of the part relative to biodiversity of the EIA provided by the companies involves verifying the correspondence of the descriptions of the vegetation covers of the areas considered with what the idea that the ANLA employees can make themselves about it.

As we will further see in this chapter, the verification of the vegetation cover and the types of ecosystems in the areas impacted and the areas proposed for the compensation was a recurrent issue during the analysis of the compensation plans. Indeed, there were often difficulties for the employees of the ANLA to get certainty of the type of ecosystems forming the area impacted by a project and the one proposed for the compensation, especially as they had to base their evaluation on the information provided by the company and on satellite images, both involving dealing with a certain level of uncertainty. This identification was also the source of a number of other issues since it also plays a large part in the demonstration of the ecological equivalency.

While the information provided by the companies was sometimes perceived as inaccurate (in terms of methods or content, when compared to satellite imagery for example), the employees of the environmental authority also seemingly had to avoid judging what was presented to them in terms of correctness or truth. On the contrary, they had to enter into a process of verification also involving the production of their own point of view, through the production of data as well as through their own experience of the area they were focusing on, whether through remote or indirect sensing, or through the observation of the site in person. This process should allow enough recollection of information for them to be able, after a series of approximative transformations aiming at generating a variety of descriptions, to contrast or compare it with the one presented by the company, so to validate it or point toward its shortcoming.

a) Importance of the visits to the projects

Although they don't always proceed this way, theoretically the evaluators should first review the geographical information provided with the EIA (in the form of a geographical database to be used in a geographical information system software), so to have a better idea of the information or places on which they should focus their attention when visiting the project in person, that is with all their perceptual, conceptual and preceptual senses. Indeed, the ANLA evaluators usually have to check during the field visits of the project whether the "characterization" of the different zones are indeed the right ones. For the compensation, this verification is also essential because it makes it possible to verify, on the one hand, that the compensation factors allocated are indeed the right ones and, on the other hand, that the compensation site corresponds to the criteria of equivalence beyond the assessment done with the map of ecosystems and that it has the characteristics that the company describes. However, since their visit being temporally very constrained, the assessors very rarely have the opportunity to go to all the impacted sites nor to the compensation sites in general, and they therefore have to prioritize on the basis of other information the areas that appear to be the most crucial to be visited.

Aware of those constraints, a specialist of the institution put emphasis during a training workshop on the importance of the field visit and the problems may arise once the evaluators are back to the office if it isn't done correctly or fully:

Por favor cuando vayan al campo, antes incluso de la información adicional, porque el plan de compensación viene de la evaluación de los impactos, ya lo hablamos hablado, y compensa los impactos. Tiene un trasfondo de que la metodología se establece a partir de los ecosistemas entonces yo tengo que validar la definición de los ecosistemas, la interpretación de coberturas, o sea todo la gran parte del estudio de la biotica del EIA al final se consolida en la compensación. Por favor cuando vayan al campo para la evaluación del EIA procuren como mínimo haber revisado ya el mapa de coberturas. Estamos teniendo... o sea, tuvimos todos los errores, o no, los inconvenientes o los problemas del mundo revisando, ahora el año pasado que entregaron ya muchos planes de compensación por pérdida de biodiversidad, revisando esos planes, porque nos estábamos dando cuenta que las coberturas en el EIA estaban mal interpretadas, y que no se dijo nada al respecto (...) para corregir esos errores que en algunos casos eran grandes y graves. Porque mi vía, mi pozo, mi hidroeléctrica lo que sea, todo lo que es pasto para las empresas siempre es pasto. Pero el pasto puede ser herbazal, puede tener una connotación natural. Y si es herbazal puede haber que compensar hasta diez. Si es pasto no compensa nada. Entonces las afectaciones en área y en compensación eran bien grande (...). Tratamos de ajustarlo a partir de la evaluación del plan definitivo, pero también como para prevenir eso, estamos tratando de apoyar desde antes, desde la información adicional, la revisión de esa documentación. Así que revisen por favor, (...) hagan el esfuerzito de revisar antes de ir al campo porque es que el problema que tenemos ahora cuando lo revisamos conjuntamente con el profesional biotico, normalmente yo o otro profesional del grupo, vemos que la interpretación de cobertura esta mal. Pues decimos: "oiga y esto me parece que no es vegetación secundaria sino bosque, sino que es un bosque bajo, como lo vio en campo?", [pero el profesional contesta:] "yo no fue allá, porque mis sitios de visita eran otros". Entonces si revisamos las coberturas antes de ir a campo, y verificamos que la interpretación este bien y que de pronto hay unos sitios donde tenemos alguna duda, pongamos un puntico para ir a visitarlo allá, y que estemos completamente... Sobre todo y fundamentalmente para el tema de compensación, sobre todo sí allá va a intervenir el proyecto. Porque en compensación esos son afectaciones bien importantes. (ANLA11)

The problem for a number of specialists is that despite the supplementary work that controlling future areas of compensation represents and their stated importance from the part of the direction of the institution, the time they have for visiting the projects remains quite constrained and some complained that it may virtually be impossible for them to actually visit the compensation areas.

b) Ecosystems characterization in the field

The description and characterization of ecosystems are done by the people of the company or the ecological consultants who work for them by evaluating the areas of ecological importance that will need to receive more attention, then define representative plots within which they will list all the trees of importance by indicating their species and their diameter "at chest's height¹⁵⁹". The ANLA assessor having a limited time during their visit, they will first assess on the map provided by the company the areas that they consider to be

¹⁵⁹ While being a very common, and even a standard, way to designate the height at which the diameters of the trees have to be measured, passing the meter around the trunk with the arms (or with the help of another person if the tree is too wide), this approximation of height in relation to the human body, not itself yet standardised, appears quite peculiar in a scientific discipline. This shows a tolerance for variations, in ways that recall the numerous studies of local and historical measurement practices, but possibly also a consideration of the little importance of the variation due to human heights in relation to the height of the trees and to trunk diameter variations within a limited variation of height, and of course according to the purpose of the measurement. One of my interviewees expressed that even if it seems quite intuitive, using "breast height" is in practice not always obvious, depending on the size and height of the roots, or the inclination of the tree.

a priority, trying not only to cover a wide variety of ecosystems but also locations in various areas of the project. A group composed of project managers of the company, consultants in ecology, who have done the analysis and the characterization for the company, as well as field workers armed with their machete, whose role is to open the way, accompany the ANLA employee where they decide they want to go to and, theoretically, whatever the difficulties of access. Still this difficulty will be taken into account, as walking in areas not cleared all day by a temperature of 40 degrees can be quite exhausting, even when a 4x4 helps to get closer to target areas and to move between them, and because of time imitations. The workers being those who systematically accompany all the outings of company managers or consultants in the field, it is ultimately them who know best the area from a sensible point of view, who know best how to move around and also to find their way around. It is therefore often on them that rests the responsibility of finding the plots, for which GPS coordinates exist but are often proved to be insufficient to find how to access them or to find the marked trees in a dense forest. The other people have willingly recognized that they would not have succeeded in finding their way and accessing the plots, in a materially grounded and bodily manner, without them. However, this does not prevent that plots may sometimes not be found, because their location is uncertain, their access blocked or that they seem to have disappeared. The visit and the operation of localization therefore involves coordination between different actors, knowledge modes, and techniques.



Figure 37: Experience, characteristics, techniques and senses involved in the recognition of different tree species in the field.

To know and verify the species of trees whose number is painted on the trunk, depending on their location and size, it is necessary to recognize some of their distinctive features. The indices sought are also adapted to what is possible, practical and which makes it possible to take into account a particular aspect or clue which differentiates it from the other species. Sometimes the trunk is not characteristic enough and you have to find something else, like their shape or their leaf, or if the leaves are not visible, because they are perched in the canopy, alternative strategies are implemented, like notches on the trunk allowing recognizing the sap by its

smell, its taste, its colour, its viscosity or its stickiness, therefore appealing jointly to different senses. The correspondence with the species indicated for the corresponding number in the list of trees in the plot carried by a person from the consulting firm is then checked.

In contrast, the studies intended to describe the fauna that might be present or go through the plots, and in particular that of a certain size, imply techniques which spatiotemporal characteristics are distinct and cannot be verified by the assessors in the time allotted to them. They must therefore rely on the information provided by the company, even if in certain cases the inhabitants or associations of the region can share some of their observations or worries, in particular as an activist gesture.

While those procedures of assessment became relatively standard, describing them provides important informations for understanding in its perceptual and analytical dynamics the evaluation process, which will conclude in the offices of the capital, where the evaluators will go back and forth between what was seen on the site and what is described.

6.2.2 A glimpse at the process of evaluation of a compensation plan

During my fieldwork in the offices of the ANLA, I've been able to observe numerous meetings which focused on the analysis of specific aspects of compensation plans. Fortunately, I've also been able to partly follow the expert who was in charge of analysing the compensation plan of the mine project that I went to visit (visit which is described in the previous chapter) during some of the various meetings they had with different colleagues to discuss and get help on different aspects of the plan. I'm therefore proposing a chronological description of those meetings, which aim at giving a glimpse at the variety of questions (and doubts) which are raised by the employees of the institution when performing the analysis of a compensation plan, as well as their modes of resolution. I will focus afterwards on elements that emerged during meetings relative to other projects, so to be able to give a more complete overview of what those meetings involve in terms of valuation of the information and courses of action.

At the time of the visit of the mine that I've accompanied, the experts of the ANLA didn't have the compensation plan into their hands, because the company which was requesting the licence for the project didn't submit it "initially", as they should theoretically have, but only after that the ANLA explicitly requested it as part of the numerous requests of "additional information". As the contract of the biotic expert who was working on the evaluation of the project and who did the field visit was not renewed, for reasons that were not explicated, the newly assigned expert, who also happened to be newly employed at the ANLA and to have a speciality in marine biology, had to take over the analysis with the available information. As I was following the evolution of the evaluation of the project, I had been in contact with the new 'biotic' and they had agreed to tell me whenever they would come to the offices to meet some of their colleagues to do the analysis of the compensation plan. Indeed, the evaluator had a number of doubts about the project. For example, since the area of compensation was already occupied with a tree plantation of an exotic species, the 'biotic' considered that the company wasn't clearly explaining how they would proceed, and that it was a bit strange to remove all those trees, which themselves won't have to be compensated since they were part of a plantation, so to be able to make a restoration afterwards. Therefore, in order to help them evaluate the compensation plan submitted by the company, which would be the first time they would do this type of analysis, they would meet with a number of colleagues with different specialities or knowledge about the project in order to have to

support. This is in particular the ones who were parts of the group specifically working on this project, as well as their manager, a person working in the department of “regionalization” of the ANLA, and a couple of specialists of the compensation group, including one specialized in geographic analysis. As often, their amount of work meant that thinking about telling me any relevant information was the last of their preoccupations, and I had to ask over and over again, sometimes by insisting possibly too much, whether meetings were planned and if so when. In this case, the ‘biotic’ had told me that they come this day at an unknown time for some meetings, and it was only by asking again in the morning that they told me they answered that a meeting would start actually in the next half hour, obliging me to rush to the offices.

The first meeting was with an employee in charge of carrying out a “regionalization” of the analysis, which consists in analysing the ecological impacts of a project in a wider context, at a larger scale, and through different methodologies establishing different approaches through which the relations between different areas can be studied, in particular through analysis of ecological connectivity and cumulative impacts (those themes and their relations with ways of approaching scale in impact evaluations are further developed in the next chapter). The idea was therefore to help the analysis by using specialized knowledge and data not easily accessible to the employee doing the evaluation of the compensation plan by seeing how the project and its compensation areas could be seen from regional or local perspectives. For example, they tried to see how the ecological connectivity could be impacted at a large scale for certain types of fauna, as well as around the project, by looking at the vegetation cover as well as the areas of conservation already existing or those prioritized by the regional authority for future actions.

Right after, the employee in charge of the evaluation went quickly to another building of the ANLA to meet with the specialist of geographic analysis of the compensation group. At the start, the compensation specialist explained that they would help to review the ‘What’ and ‘How much’ of the compensation, so to verify the correspondence between what the company says with what could be perceived from the maps, geographical data and satellite images, and that if they had time they could also check roughly the ‘Where’ and the ‘How’. They then explained that after the meeting they would send to the ‘biotic’ an excel file containing first a description of “what can be observed”, formally called “results of the verification”, and secondly some “suggestions of requirements” which the ‘biotic’ may or may not include in the “technical concept”, that is the document that will contain the analysis and decision of the environmental authority regarding the project. They also insisted that they should review carefully the plan so to make sure that the company would be able to start implementing it no more than six months after the first impact, as provided for by the norm.

While the basis of the work they had to do during this meeting was based on the joint analysis of the geographical data which is available to the ANLA and what is provided by the company in the form of a geographical database (GDB), the ‘biotic’ indicated that this database didn’t seem to exist or to the very least was not possible to find, and everyone in the group evaluating the project had been quite confused during the couple of weeks since they had received the “additional information” from the company. This made the specialist of geographic analysis a bit perplex, saying that it was absolutely necessary and that they may not be able to work on the compensation plan today without it. Finally, after nearly twenty minutes of discussions and research, the information was found on the server of the ANLA. The problem was that, since this type of

data is quite large and that the server impose a size limit for the files, it was nearly systematically delivered on a USB key. As this time it couldn't be found, the employees therefore thought that the USB key had not been remitted or that it had been lost, and no one actually thought about verifying the existence of the data on the server. The 'biotic' was relieved of this discovery and said that they would inform their colleagues of the good news as soon as possible. This small anecdote, which happened at the beginning of the meeting, showed that information, over the course of its translations, is never free of its medium nor from the material arrangements and coordination necessary to pass it over.

When the files were finally opened, the specialist was disappointed to notice that the orthophotographs (photos of the ground usually taken from a plane perpendicularly to the ground and rectified to eliminate the effects of perspective) provided were not covering the whole area of compensation. They also observed that, since in this case the area of compensation was part of the area of influence of the project (which is not always the case, since areas of compensations are not considered to generate impacts and therefore an area of influence), the company should have "socialized" the project, meaning that they should have gone to local communities to at least inform them of their plans, and eventually get their opinion. Finally, they were also not happy with the structure of the information provided, because they provided a new database with the "additional information" instead of adding layers to the existing one, and that some layers seem to be missing or were split without reason, obliging them to put everything in order before being able to see what was actually missing and to analyse the content of the plan itself¹⁶⁰.

After having seen the maps of ecosystems and the delimitation of the areas to be impacted and those to be compensated, understood the signification of the colours used in the map, wondered the meaning of isolated polygons (georeferenced sets of points) and evaluated the list of the polygons to see whether their descriptions were sufficiently detailed, it didn't seem clear to the compensation specialist what the exact actions that the company wanted to do were and how they would demonstrate that they had reached their goal. The specialist then explained to their colleague that there were two possibilities for the company to do the ecological characterization, that is the description, of an area that the restoration of the compensated should target: the first one was to study the area to be impacted, and the second was to look for the better preserved and ecologically 'equivalent' areas of forest close to the impacted site and to make parcels of observation there. While the equivalency is defined in a specific way in the Manual, for practical purpose of the restoration, a baseline has to be constructed and can therefore be, according to the specialist, the one of the impacted area, then 'transferred' to the compensation site, or the one of an area nearby, somewhat assumed to virtually extend to the compensation site. Here again, the idea is to be able to determine goals, a projection in the future of expected results, and means to measure them, as if it was an in-vivo experiment with a control group, and therefore an anticipated argumentative grip manufacture.

The technician then started to review the types of vegetation cover that the company used to describe the different areas, through their conventional colouring on the map, and to compare them with what they would

¹⁶⁰ Here again one could be inclined to separate in the description what may appear as separate in the actions, that is making a difference between data production, transmission, management and organisation from what those operations may be seen as allowing, that is the proper analysis of the data. Nonetheless, this would arbitrarily separate phases of analysis of content from analysis of form, which in practice is never the case. Data has a materiality and what is resented can never be detached from the ways, procedures and transformations through which it is represented. Therefore, in the present case focusing on the issues of organisation of the layers (or an USB key that couldn't be found) is as relevant as the 'reality itself' they are supposed to represent and the conclusions that can be drawn from them by assuming a level and kind of truthness of the representation and the possibility of accurate interpretation.

observe from the available sources of information. They explained that such an area of such a colour was such a cover, and that if it represented a “natural” area then the compensation factor was applying, that if it was secondary vegetation, which was another colour, then the factor should be divided by two, and if there was just grass then the factor was zero, but brought nonetheless to their colleagues’ attention that it could be a factor of one to one if the ‘biotic’ decides so by making a technical justification. They then consulted for reference the PDF titled “National Land Cover Legends”, so to verify that the land covers defined in the EIA did correspond to “what is”, that is that they actually correspond to the definition given in the document. They explained that this document was actually the official categories of the Corin Land Cover, and that it was more for European covers but that it had been somewhat adapted to the Colombian context. In some cases, they didn’t agree with the classification made by the company, considering that “this polygon is not secondary vegetation to me, this is forest”, and writing in the document summarizing their analysis: “polygon 609: an open forest relict has yet to be identified”, and that in this case the company should fully compensate. Reviewing the parcels made by the company in the different areas of the project, and being that none was in the area described as secondary vegetation, they wondered: “How do they know it is secondary vegetation if they haven’t carried out any sampling?”. They were also very sceptical of the description of polygons of the geographic database as “tall secondary vegetation” which they considered, by looking at the aerial photographs layer of the map, to also be “forest”, finally concluding: “I almost see all the secondary vegetation as forest”. The ‘biotic’ agreed that there was indeed many “inconsistencies” in the classification of the vegetation cover.

Since both of the employees had other meetings planned, they decided to postpone the rest of the evaluation too later in the afternoon. It could have been another day but one of them living far from the offices, and considering the problems of transports in Bogota, they preferred to avoid as much as possible coming to the office and therefore try to finish the analysis they were doing on the same day.

In conclusion, the technician of the compensation group asked their colleague to request to their manager, who was overseeing the whole evaluation of the project, “to create the activity so that it is recorded as something”. This meant asking to the manager to enter in the system of the ANLA an “activity” (in this case the review of a compensation plan) as part of the “management reports”, so that both of the employees could render visible their work and prove that the meeting took place, existence corroborated by joining a scan of the attendance paper along with the summary of the meeting. Those “supports of activity” are then compiled at the end of every month so that it could be evaluated by the management whether each employee met their assigned work targets or not.

After this meeting, the ‘biotic’ told me that they were going to join a meeting the whole group of people working on the evaluation of the mine project, and I’ve therefore decided to continue to accompany them in the next part of their workday. The meeting of about a dozen people should have taken place in a meeting room, but they are scarce and none was available. The coordinator offered their office but it was unlikely that everyone could fit in, so it was decided to discuss the project in a corner of an open space, some people on the available chairs but the majority standing or sitting on the floor.

The main ‘physical’ of the project started by saying that, now that the GDB had finally been found, it appeared that it contained some inconsistencies, again in relation to the place and shape of certain polygons but this time about water management infrastructures, and also that, while they would need the help of a specialist for studying the issues of subterranean water flows, no one seemed available within the ‘mining’

department of the institution. Usually, in this case they would ask a favour to other departments to “lend them” a specialist, but someone recounted that “everyone said at the last coordination meeting that they no longer want to lend people to ‘mining’”*, to which the manager answered that asking favours would not work anymore and that they instead would have to formally request some help. As expressed above, everyone in the institution has tasks and targets assigned to them, more often than not amounting to an already heavy workload, and therefore very few people could actually have the privilege to get their heads above water and consider helping others or taking more time than strictly necessary to deal with a given task.

After that, the ‘physical’ described the hydrogeological problems they saw with the project and got angry with the fact that even with the ‘additional information’ provided the company it was still not clear what they planned to do with the residual waters, the ‘social’ took the floor to give a rundown of the issues they were still perceiving in relation to the project, and in particular to how the area of influence had been delimited. Other specialists then intervened to recall to the group the requirements of additional information that had been made and the response given by the company to them, the problems they were seeing and the incoherencies. They were then usually asked: “What are you thinking about it?”, and they would then give their opinion about particular aspects of the issues or what remained to be investigated.

When the turn of the ‘biotic’ came, they put emphasis on the inconsistencies and misidentification of the vegetation cover, in particular parts of what appeared to them to be riparian forest that had been categorized as secondary vegetation. They were nonetheless happy with the update done to the characterization of the flora, through new surveys, but lamented that no analysis of fragmentation could be found in the information they had. Following a question of the manager, they said that this hadn’t been asked as additional information but was nonetheless existing in the EIA’s terms of reference, implying that the company should have done it anyway, and they said that it was very important to determine the impacts, the area of influence and what should be compensated. But, for the manager, while “in the terms of reference there’s everything that one could potentially have to present, it is not necessary for the company to present everything, and that is why there’s the possibility for the ANLA to request additional information after having revised the EIA, where I can ask for the information I need, and if I do not do it I cannot punish or limit the company for something that we did not ask for”*. As we will see later, this discussion about the scope of the necessary information to forge an opinion, the right moments to notice a lack or obtain it, the issues of uncertainty, the fairness required in the process as well as legal considerations, will be at the core of the discussions that the group had when they had to take a final decision on the fate of this project.

Regarding the compensation plan, the ‘biotic’ pointed the absence of characterization of the area proposed for the compensation as well as the absence of inclusion of the area of intervention of the roads to be built in the calculation of the compensation.

After a few other interventions, one technician focusing on hydrological issues expressed that they had read in one of the studies provided by the company that after twenty-five years two streams will lose their flow and two others will lose 30% of their flow. While saying this in quite a neutral way, that is as something important but that is part of the study and that they just wanted to mention it, almost everyone seemed astounded by the information and some started laughing and saying ironically “whoops, just a little detail before leaving!”*, to express that to the contrary it seemed very significant to them. Someone else said that this couldn’t be compensated, and the technician responded that “yes, this does change the balance, you can divert a river but you can’t dry it up”*. The manager supported what was said, saying that they couldn’t ask

compensation for this, and that “it’s either managed or it’s not”*, to which the ‘physical’ agreed by considering that the issue was “very serious”, and later made a somewhat solemn statement:

I do want to say something about the management measures: if the measures imposed are so insufficient to reduce these impacts, I would like that the economic valuation could not be used to compensate them, because the impacts are so significant and the measures are so weak that, for me, to impose an obligation of a [supplementary management] measure that nobody is going to review, so that afterwards they simply have the licence and do their thing, and that’s it, and the streams and everything is over and nothing happens well... Because within the follow-ups, when are these conditional aspects reviewed?*

This intervention showed both a limited trust in the follow-up commitment of the ANLA as well as a fear regarding the temptation that economic valuation, possibly according to their experience in the institution, may be used to assess and compensate impacts beyond what they consider to be acceptable and a meaningful use of this type of valuation. One of their colleagues right next to me looked at me with a disapproving face and said: “So what are we doing here all this time for God’s sake? What are we working on?”*, and I asked, “To do follow-ups?”*, and the employee responded, “Yes of course!”*.

After further discussions on this aspect, the technician which originally raised the issue finally concluded the conversation, for the time being, by expressing that they were considering that “the decision we will take on this issue will decide whether the project can go or not”*.

Considering the diverse points of view, one coordinator insisted at the end of the meeting that it will be necessary to request the opinion of a specialist, but that all the information should be well organized to help them, and that they should receive an already “pre-masticated” analysis, because “everything depends on it”, so that with their opinion “everyone should be able to foresee the direction the document is going to take”*. The idea was to work toward the alignment of the point of view, “so that in the end there’s just one document”*, that is one decision, and not the accumulation of the various opinions of the employees of the authority, despite and especially in the case in which they wouldn’t all fully agree.

As they were leaving, some of the employees thanked ironically and laughingly the technician who revealed the issue with the streams, and kept joking on the “small detail just before we go” which had largely changed their view on the project.

After a lunch which was the opportunity to discuss the definition of secondary vegetation, the projects that are accepted with too many requirements while they may have not been accepted, and what led them to shift from working in a private consultancy to working for the ANLA, realizing that the workload is finally worse and that the delays given to do the analysis of some project are too often unrealistic but nonetheless rigid, I accompanied the ‘biotic’ to the second part of their meeting dedicated to the geographical analysis of the compensation plan.

As they started to review the classification of ecosystems done by the company, the compensation specialist explain to their colleague that there isn’t any official methodological publication describing how to identify ecosystems, and the this was creating a number of difficulties. As they noticed an “error” in the ecosystem maps provided by the company, they wondered if they should be “strict” about it or not, but after verification the compensation factor would not change even with the rectification, so the total quantity of area to be compensated wasn’t affected by the error and the specialist therefore considered that for the present analysis of the compensation plan it didn’t matter.

Another issue with the compensation plan, according to the specialist and their analysis of the maps of ecosystems, was that the impacted ecosystems and the ones proposed for the compensation were not exactly the same, and even the latter had a compensation factors a bit lower: “almost all the compensations are in violet or blue areas”*, they said referring to the colours of the polygons representing ecosystem types on the map on the screen. They considered that it may not be that bad, but the way it should be treated depended on the quality of the compensation actions proposed: if the project was good, then they may be a bit flexible and it could be considered a “manageable error”, but if it was “crap” (although they later warned laughingly that “this isn’t a technical expression!”), then they should tell the company to revise the identification of the ecosystems and their compensation factors.

The specialist then said to their colleague that “after having reviewed the ‘Where’, we’re going to review the ‘How’”, and asked: “so how do you see it, what are they going to do?”*. After an unsure response, they proposed to go back to the document and explained: “we have to be very careful with what is said in the compensation plan, because sometimes they say that they’re going to do restoration and then when one look more precisely they say that they’re just going to plant some trees and don’t do anything else for three years. So there should be very clear goals, and the compensation cannot be validated until the goals are met”*. The ‘biotic’ then described the proposed actions, the type of trees they were planning to work with and the fact that, since they were planning to do the compensation over fifteen years, they wanted to start with two years of monitoring of the area to study the connectivity and recover the area. The specialist therefore asked, both to know the opinion of their colleague and to pedagogically accompany them in the analysis: “So if this is the goal, how would you do, or how do you imagine that you could close the obligation, when will it be?”*, referring to the specific parameters that could be put forward to assume that the goal was reached. The biotic answered that “after fifteen years, really the whole area that they had to compensate is consolidated and that it could be seen that it’s going to maintain itself”*. The compensation specialist agreed that “obviously there should be a natural cover”*, but also considered that “as they talk about specific species of animal, for me one of the goals should focus on those species”*. In particular, they said, the plan was presenting observations of the presence of jaguars and the impacts of the mine on the connectivity of its habitats, so they would like to see whether they could set some jaguar-related targets. The ‘biotic’ said that it could be interesting but that unfortunately they hadn’t yet fully reviewed the part of the EIA focusing on fauna so they were not sure why two species had been put forward by the company. While they wanted to have indicators relative to the jaguar, the specialist nonetheless warned, again with a good dose of irony, that if this is taken to the extreme and that “all the goals, indicators and targets and focused on the jaguar, in the end we’ll have to require from the company to prove that at least one jaguar was born in the compensation area”*, and that they therefore recommended that there may be indicators of ecosystems potentially framed as jaguar habitat, but not focusing exclusively on the jaguar itself.

They then discussed the relation between the areas proposed by the company and their activities, that is the perception that the technicians could have of the suitability of certain areas for either restoration or conservation activities, by looking at the polygons of the area of compensation. Here, the specialist wasn’t pleased to see that there were hundreds of polygons without clear reason, and that the company hadn’t described each of the polygons with both the vegetation cover and what they wanted to do in it, so to be able to know exactly what is in each area, what actions will be done, how it’s going to be done and for how long, what the goals are, how they can be justified and when they are expected to be met. On the contrary, they said

that they also didn't like when companies were giving only one polygon for the whole compensation area and labelled it as "restoration", because it often didn't sufficiently account for the diversity of the area and of the activities that they actually may have to execute.

Before concluding the meeting, the specialist finally recommended to their colleague to clearly request to the company to modify the polygons and to provide the information they considered necessary for each, as well as to clearly indicate in their report, even if they considered that the company seemed to have it already understood, that it won't be possible to do anything else in the area that will serve as compensation, that is that they shouldn't use it for other compensations nor as an area to produce wood.

A week later, as the 'biotic' still hadn't been able to make significant progress on their work, they came to the offices to meet with another forest expert of the compensation group. Since this expert didn't have the time to review the compensation plan in advance, the 'biotic' therefore started by presenting the project, coming back on the connectivity analysis presented by the company, and on the fact that they use it as the justification for being able to use as compensation area a lot that they already own and use as a tree plantation, despite a troublesome ecosystemic equivalency between the two. This justification, the 'biotic' explained, was made through the demonstration of the existence of a corridor linking the impacted area and the compensation site, which should therefore benefit the species previously passing through the site of the future mine. On the other hand, the still unresolved issue related to the existence of the plantation, and that they were proposing a restoration of the area without clearly stating what would happen with the plantation, nor they were providing a description of the biodiversity of the area, something which was considered as a big issue.

It seemed to the 'biotic' that the connectivity analysis was somewhat trying to hide the deficiency of the biodiversity characterization and that, despite being highlighted, the analysis wasn't so convincing. In order to better understand it, the expert of the compensation group first checked the methodology used for the connectivity analysis, which was using a specialized software that they didn't know. They therefore tried to see the information that could be found on the website of the editor of the software, but without going into too much depth. They then looked again at the problem of equivalency by coming back to the text of the Manual, so to see how it was defined in it, as well as to see how rigid was the definition.

Since the compensation plan lacked clarity, the expert asked to the 'biotic' whether the plan had been submitted with the licence, but since it had been received with the "additional information", they couldn't request any detail before issuing their decision. The discussion therefore turned around whether it may be better to reject it or to accept it with conditions requesting them to make some adjustments, a possibility favoured by the expert of the compensation group, who was saying that in any case the company had six months after the first impact to have their plan ready.

As the expert in geographical analysis went by in the open space, they improvised an extended meeting and went again through the issues previously raised, so to see whether they may progress in the analysis and agree on the position that should be taken on the project.

6.2.3 Articulating the interpretations and valuations of information and procedures during the analysis of compensation plans

During the meetings described previously as well as other meetings that I've been able to attend, the employees were constantly facing difficulties in the necessary process of articulating their interpretations and valuations of the information that was available to them and of procedures and guidelines that should be followed. This section illustrates some of them by focusing on situations encountered during my fieldwork during which they appeared. More specifically, the difficulties were first relative to the production of grasps allowing them to determine whether the information considered necessary exists, has a form which allows its interpretation, and can be trusted. Another difficulty was to sort out the relevant issues, that is what actually matters for the analysis that the specialists ought to do, from the more secondary ones, and to link this hierarchization to quality and presence of specific data. Beyond the analysis of the information, difficulties also appeared in relation to the challenges of following the procedure, both at the institutional level and with regard to what the compensation Manual expresses, and to make decisions in the cases which are borderline. Finally, transversal issues related to the unavoidable presence of uncertainties and to the complexity that the biodiversity compensations entail.

The ways those difficulties were resolved also showed that the meetings are not only a moment during which the experts verify together the project but they are also a moment of pedagogical transmission of the ways of doing the analysis of the project from the compensation expert toward the generalist technician, as well as a moment during which they would try to find agreements over definitions and tune up their interpretations.

a) Presence, presentation and confidence of the information

The meetings aimed at verifying the appropriateness of the means of compensation with regard to the proposed areas of compensation, including their context and biodiversity characteristics, meaning that the approach toward the evaluation of compensations is always specific, situated and relative. This is for example the case with the type of activity (restoration vs conservation), the species that will be used, the way the restoration will be done and in which order, etc.

The employees expressed that even when the company was presenting a project which was looking great at first glance, they should be careful about whether the company was actually planning to implement the corresponding actions for the specified appealing goals. Indeed, they had found numerous examples in which the actions that the company was finally offering to assume were only the first steps of the described great plan, or that after a lengthy presentation of the great project they "say in a small paragraph" that they would only buy some land and say that other actors would be responsible for doing the long-term restoration. In these cases, the way of presenting the information is therefore also important, and companies and evaluators do not put emphasis on the same aspects: aspects that may be emphasized by one side could be considered barely relevant by the other, or things that were minimized could be deemed requiring to be carefully scrutinized.

Beyond the presentation of the information, the discussions also revealed issues of confidence in certain types of information, like pictures, and what they are supposed to show or mean. One expert for example put

emphasis on the fact that they should not only verify whether the company submitted all the requested information, but also the type and quality of this information as well as the possible gaps.

b) Assessing the relevancy of issues and information

Statements present in the document submitted by the company may or may not be considered appropriate by the evaluators, but they also may or may not be part of what they are actually supposed to evaluate, implicating also a constant sorting out of the relevance of certain information for what they aim to evaluate, and sometimes discarding what is considered to be out of their scope, even if found to be potentially problematic.

The problem was also the degree to which what was expressed had to be factually checked or if the factuality of some statements didn't matter. For example, in one compensation plan a company was putting forward the fact that "The execution of the present plan will provide environmental, social and economic benefits in terms of: biodiversity gain, generation of ecosystem connectivity between forest relicts, oxygen production, water regulation at local scale, carbon fixation and in general terms, improvement of the biotic conditions of the region"*¹⁶¹. Talking in particular about the fixation of carbon dioxide, the evaluator wondered, in a way that was rejoining the general discussions over the design of indicators of the success of the compensations: "They say that they are going to achieve this, but is it just to talk and fill the pages of the compensation plan or is it really their goal and, if so, how do they plan to demonstrate that they reached it, with what indicators?"*. To better perceive these difficulties, the evaluator concealed to a colleague to "project [themselves] at the end of the compensation project to imagine what is actually going to be measurable and what won't be"*, therefore putting emphasis on the measurability of certain outcomes.

In some cases, the propositions made by companies were considered not to be specific enough so to be able to finally distinguish precisely what activities and what outcomes were planned in which area, generating the worry that analysing later what activities had actually been done would prove to be almost impossible. To remedy this, one expert was recommending asking to the companies (or at least to check that they were answering this virtual question in their proposition) to "tell where exactly they're going to do what specific action so that I may be able to come to this place and verify and measure it"*.

These observations showed that valuation of the appropriateness of the information about what is and about what should be done can only be done jointly with the valuation of the established relation between them. Moreover, the relation that is established between information and meaning, doesn't only entail the perception of the series of transformation that led to its current state as data, but also the possibilities of pursuing the transformations in different directions to allow perceiving other indices or to demonstrate a certain state of fact.

c) From ecological to procedural issues

During their meetings aiming at carrying out the analysis of the plan submitted by the company, the employees of the environmental authority also discussed: problems with the fact that regional authorities who

¹⁶¹ Plan de compensación por pérdida de la biodiversidad en el marco del proyecto "construcción de la segunda calzada túnel – san jerónimo UF 1 y UF 3, Proyecto autopista al mar 1, LAV0066-00-2016, Medellín, agosto de 2018.

had agreed to receive the lot was sometimes changing their minds, the special care that should be given to “strategic ecosystems”, the legal possibilities or impossibilities to group different types of compensations, issues of vocabulary use and institutional practices, difficulties to understand what the company described as their activities (for example whether they relate to a specific area or another, their methods, the identification of the ecosystems, the specific analysis of species present in the area, the possible risks and whether they have been duly considered and their management described, etc.), but also the type of source and methods that they may be able to use to verify distinct types of information, as well as the scope of the information they must verify and those that they may consider irrelevant for the task at hand, in particular relatively to the complex administrative history of the project, and the level of clarity or confusion they may reach about the project.

A large part of the discussions were therefore not relative to ecological issues in the broad sense, since many procedural and legal matters actually superimposed themselves on the issues of the practical compensation actions. It was therefore constantly acknowledged that the compensations, before being a type of action on the environment, are legal obligations formally regulated, debated, then contractually agreed, all of this through specific procedures regulating the type of evaluation that can be made and the possibilities for the company to contest the decisions.

d) Fuzzy frontiers between acceptance and rejection

Another type of procedural issue appeared as some doubts emerged during a meeting regarding the quality of the plan proposed by the company. One of the employees, who was more expert in compensations since they were part of the compensation group, reminded the other one that the “house policy” in the cases in which the plan of the company wasn’t too bad was to not say “no”, but to accept the plan and put requirements to change or improve specific elements. But, as they reviewed in more details what the company was proposing, and that their proposed actions appeared to not be clearly related to specific areas, their problem became that they wouldn’t be sure of what they were actually accepting if they were validating the plan, therefore again shifting the frontiers between acceptance and rejection as well as their possible conditionality.

Similarly, they also wondered what they should do in the hypothetical case in which the goal that had been set for a specific compensation was to have a 90% survival rate of the planted trees at the end of the three years during which the company had to maintain them, but that at the end of the second year 30% had died. The question was therefore whether they should just oblige the company to replant 20% a care them for a year, or if they should maintain the whole area for three more years, that is whether the 90% corresponded to trees at least three years old or trees of whatever age that could be observed to be not dead at given moment at the end of tree years. While this question may seem either purely technical or economic in the broad sense, it shows that not only the plans, that are designed by the company and accepted by the authority as plans establishing compensations that are both environmentally right and fair for the actors, often face practical difficulties as they become implemented in specific places. Indeed, in this process the milieux in interaction disrupt their seemingly beautiful designs, processes and chronograms. In turn, the responses to be given to those issues (and the Manuals are even less clear about that) themselves raise, for the actors who have to take a stance, a number of other moral issues at the intersection of the normativity, jurisprudence, institutional positions and individual modes of valuation, while taking into account the diverse actants as well.

But the confusion about the frontiers of the acceptable seemed to be entertained as well by the institution. Indeed, one of the experts started to laugh out of despair when they read that in a past decision about the project the ANLA had both said, in a very contradictory way, that the compensation plan of the company was approved and, right after that, that the company should present a new plan with the requested modifications, therefore expressing an awkward attempt to find a normally impossible middle ground between approval and rejection.

e) Dealing with uncertainties and complexity

My observations showed that in situations with uncertainties, due for example to particularities of the area, to the fact that the area studied was at the frontier of distinct ecosystems, to the transformations which occurred over time or the quality of the information or the images, they often had to rely on conjectures or to find external clues and grasps so to produce arguments to accept or reject the interpretation of the company. For example, three professionals of the institution who had met for the analysis of a compensation plan discussed a long time to determine whether the area that the company had specified as the place where they would plant some trees was a swamp or not. Depending on the types of imagery, whether photographic or infrared, the size and reach of the wetland weren't identical. While the company was claiming the trees were meant to be planted at the edges of the swamp to protect it, and that it was even the very justification for the interest of their project, the employees of the environmental authority were worried that, if they were accepting the proposition of the company, the population may protest against the fact that the ANLA had allowed a company to plant trees in a swamp, something that was for them obviously undesirable. On the other hand, the company was claiming, on the basis of information given by neighbours of the area, that the area wasn't subject to flooding, which would be an argument to consider it as not being part of the swamp area. For one expert of the ANLA, the only way to resolve the issue with certainty would be to perform a soil analysis of the area, and to check its composition and humidity so to understand its type and its closeness to the characteristics of the soil in permanent swamp areas. This solution being impracticable, the specialist of geographic imagery tried instead to look for other sources or type of images, including historical ones. Every time it seemed like the area was likely to be part of the swamp, but without any definitive judgement. Finally, the definition and meaning of what a swamp was itself becoming uncertain, and going back to its official definition didn't help them to resolve their issue, leading them into the uncomfortable situation of having to make a seemingly arbitrary decision. They therefore considered the idea to reject the proposition, as a measure of precaution, but to justify this they still would have to produce appropriate arguments, and they were not sure that it was possible.

Other times, the complexity led the employees to have to spend more time than expected on the analysis of a compensation plan. For example, a few days after a meeting during which they hadn't been able to finish the analysis, one of the two employees, that I met by chance in the offices, recounted me that they had encountered quite a few difficulties, and in particular a number of procedural ones, and that the analysis of this plan had therefore been a rather complicated puzzle to solve. One of the issues was related to the fact that the company had changed parts of the plan between the one that was already approved and the new one, putting the authority in a situation in which applying authority was uneasy. Another issue came from the fact that the company wanted to implement conservation actions in an area that does not correspond to what the local

management entity wanted. Furthermore, they were proposing actions that became possible in a new decree but not in the older one that was applying to this project. Finally, the employee of the ANLA told me that a number of their problems came from a lack of clarity at the normative level and that, while it was possible that the company was confused, they thought that the company probably knew that they didn't have the right to do what they were doing but perhaps hoped for some tolerance from the ANLA.

At some point in the course of a meeting during which the experts of the ANLA were struggling to make their analysis, I said ironically to the puzzled employees that it wasn't that complex since, as it was said to me before, their task was "to simply apply the Manual"*. They laughed and responded a bit disillusioned: "Yes, sure, it's very, very simple..."*. I had allowed myself to make this joke because the people of the ANLA themselves were sometimes also ironically answering my questions and were often making jokes between themselves. For example, as I asked if the compensation plan of a company, which was about 300 pages, wasn't a bit too long, a specialist answered me laughingly that "No, this is pure science!"*. The answer to my joke and this last one show that employees are well aware of the uneasiness of their task, despite a process which appears quite straightforward on paper. This is not only due to the complexity of the projects but also, as we will further see, due to the inherent uncertainties generated by the combination of the respective nature and incompleteness of the biodiversity and of normative regulations.

6.2.4 The information struggle of offsets' design and implementation

During a discussion in the offices, professionals of the ANLA were commenting the "very good compensation project" of a large mining company. They said that they were impressed by its good "trajectory" despite the difficulties, especially considering the administrative laboriousness that the project had faced. This satisfaction was reinforced by their acknowledgement that companies often have big ambitions at the start but that the real difficulties start when they get into the territory, so that many times they end up with something much less good than their paper non-landed project. Indeed, this section aim at illustrating that, despite the common view that compensation plans represent the compensations that should or are implemented, the difficulties encountered during the practical implementation of the compensations are actually generating numerous tensions between calculability, predictability, objectivity, trust and data availability.

One of the numerous struggles usually encountered in the design and implementation of the compensations concerns the selection of the areas of compensation. Indeed, the selection and securing of available areas for the compensation are in practice quite complex and, according to the context in which they operate, companies and consultants develop for each project a specific methodology. Priorities for the definition of the 'Where' of the compensation are set by the Manual. Nonetheless, the fact that it opens the possibility to expand the search to the broader geographical category in case compensation areas were not found (for example by looking into the wider hydrographic area instead of proposing the compensation in the same hydrographic sub-area as the project) puts the burden on the demonstration of the impossibility to implement the compensation in the closest geographic recommendation "on the basis of technical conditions which justify its prioritization"*. Therefore, in addition to the criteria established by the Manual for selecting the location of the compensation, which are the legal minimum, many other parameters are taken into account by the companies or consultants who draw up the compensation plans for them, as shown at the end of Chapter 5 through the road compensation example. As they try to take into account the available information

as well as the practical and legal constraints, they also often add a number of other criteria to which they hierarchize by following a specific order or assign a number of points. But these systems are confronted with the limits of what can actually be known and objectified.

To overcome those recurrent difficulties, some actors that I have interviewed expressed their hopes regarding the advent of a greater automatization of the choices that ought to be made for each project, so that the most 'efficient' solutions could be selected in ways that may generate agreement between the companies and the institutional actors. For example, one of interviewee recalled the development of the software MAFE (*MApeo de Formulas Equivalentes* — Mapping Alternatives for Equivalentents) produced by The Nature Conservancy for the Ministry of the Environment and the ANLA to help companies find ecologically equivalent areas, and which should also give a tint of official legitimacy to the demonstrations provided by the companies in their compensation plans.

Going further, another interviewee expressed that the protocols provided with the Manual ought to reduce the human-induced errors, and imagined a future software which would automatically make decisions purely based on existing data, models and the compensations' autonomous axiomatic. Through this, the idea is to generate confidence on both sides of the environmental licences, and in particular to relieve them from any responsibility in the case of failure:

Estamos detrás de automatizar buena parte de las decisiones para que no dé miedo tomarlas. Se puede echar la culpa a la máquina. Podría servir para calcular los factores y a partir de la intervención calcular los mejores sitios donde debería hacerse la compensación. Algo que mencionábamos hace rato: puede que una compensación de 100ha sea mejor en un sitio y una compensación de 1000 sea de otra forma en otro sitio, aunque sea el mismo ecosistema y la misma subzona hidrogeográfica, pero a partir de ciertos valores puede tener sentido declarar áreas protegidas, pero con valores inferiores declarar areas tan pequeñas puede no ser buena herramienta y sea más efectivo hacer corredores de conectividad, etcétera. Entonces [las decisiones deben estar] como contexto-dependiente y tener todo bajo la mejor información disponible. (Humboldt1)

But, for other actors, the reality of the possibility to make accurate decisions and evaluations based on the maps remains uncertain. Describing the relations between levels of information and the possibilities of remote decision-making in a highly heterogenous context, one interviewee questioned in particular the pertinency of using maps to establish the compensation factors:

A mí por ejemplo me decía una persona: "mire, la escala de estos mapas de 1:100 000, hace que en los Andes, llegas, y según el mapa, bueno tú vas al sitio y tomas tus coordenadas y cuando vas al mapa y bueno y tú miras qué tipo de ecosistema hay con base en la temperatura y la humedad y todo, dices aquí hay tal tipo de ecosistema y ves el mapa y cuando pones las coordenadas te pone en el ecosistema vecino porque la línea está corrida", porque hay un error de precisión porque el mapa es demasiado grueso, tiene una escala muy gruesa. Y además porque en los Andes tú sabes los mapas son proyecciones y en los Andes pues el terreno es en ángulo, entonces un desplazamiento de unos pocos metros en el mapa en realidad puede representar un desplazamiento de 50 o 100 metros de elevación, que ya te cambian completamente el régimen de temperatura. Entonces con base en información de esa calidad se están tomando esas decisiones de que si esto es equivalente o no, de que si esto estaba más degradado o no. Tú llegas al sitio y ves mucho bosque, llegas al mapa y según el mapa eso es una zona que está más degradada, entonces el funcionario sobre que está tomando esa decisión? Sobre el mapa. Por qué? Porque no están haciendo visitas de campo para evaluar el plan de restauración dónde va a quedar. (Independent1)

In this extract, the person interviewed seems to assume that the companies may try to use to their advantage the fact that the information of the maps may not correspond to what could be observed on the field. Actually, the perfect constant adequacy and updating of the maps to perfectly correspond to what they aim to represent in real time and at relevant scales remain chimeric despite the profound transformation of EIA caused by the wider availability of geographical information systems and imagery. Moreover, in Colombia, one of the criteria that eliminates the most potential areas for compensation is the land ownership, which is sometimes uncertain, inexistent or only based on tradition.

Finally, another problem with the availability of data concerns its production and the possible concealing of unwanted information by the companies. Without explicitly saying that it was occurring or more at risk to occur in Colombia, the 2014 OECD report on the environment in Colombia deemed relevant to recall the risk that companies may limit the information on their impacts on biodiversity so to avoid compensation, and that “the experience of other countries suggests that serious work is required to ensure that compensation provides real additionality, that decision-making must be fully transparent to avoid any possibility of corruption, and that effective law enforcement is essential to the implementation of the system”*. While the Colombian context is difficult on many aspects, and that it was challenging according to numerous actors to develop the compensation guidelines, it may also be precisely because of this context, the inefficiency associated with the government actions as well as the corruption that exists within it, associated with a liberal view that considers that companies are more efficient and trustable, that some actors may perceive biodiversity offsets as an appropriate tool.

6.3 Relations between the ANLA and the companies

The question of the ways is perceived the relation between the ANLA and companies may seem irrelevant or secondary at first glance, with regard to the question of the relations that are made between different types of knowledges or information and a number of moral preoccupations through different modes of valuation. But it is in reality not only pertinent but also fundamental. Indeed, the meaning of the information, preoccupations and valuations do not exist in a floating space above the actors who could simply pick them at their convenience, but are produced precisely at the points of friction emerging from the encounters of different actors, of different types of information, of the information and the reality it is said to represent, and of different concerns which have to be hierarchized.

This section builds on the interactions between the ANLA and the companies that I’ve been able to observe during my fieldwork. The interactions between the institutions, or bureaucracies, happen widely through the documents they are exchanging, but I’ve also been able to observe how their employees were interacting, for example during the visits of the projects as recounted in the Chapter 5, but also during meetings and encounters of various kinds. Those taking place within ANLA’s premises were of two kinds: either they were formal meetings of request of additional information, that the company had to attend, or they were meetings taking place at the request of the companies and during which more informal presentations as well as questions and answers could be made.

Within the licensing process, miscommunications, misunderstandings and ambiguities are quite common, and observing the ways through which actors resolve them, and sometimes try to defend their point of view

through the production of arguments, allows perceiving the reciprocal adjustments that they are making to each other. As this section will show, numerous interviewees also expressed that the type of communication had a great influence on the way information was treated, which therefore consists of an interpretation in the light of the context and the meta-information passed through the transmission and discussion of the formal information. Nonetheless, a first obstacle for an efficient production and communication of the formal information required during the process of evaluation of the compensation is the competence and expertise of the people and institutions who have to deal with it.

6.3.1 Problems of competence and expertise

The application of the Manual of compensations, and in particular the grasp of its conceptual frame and the process of transformation of the latter to practical activities, appeared to be challenging to all the personnel involved in the compensations, including the people from the environmental authority but also from environmental consulting agencies and from the companies who wish to have a project licensed. To remedy this situation, a number of internal workshops are continuously organized within the institution, and the ANLA receives those who have specific questions. Other actors are also starting to offer courses focused on the compensation, so to train professionals who are working in the field. For example, the Javeriana University proposes a course¹⁶² which intends to “clarify technical aspects, resolve doubts, generate ownership of the tools, visualize opportunities and generate pragmatic knowledge on how to carry out environmental compensations in Colombia”*. They also express that their goal is to help participants to understand how correct environmental management can favour both the resiliency of ecosystems and business strategies.

While it was noted that some researchers external to the ANLA felt that employees of the ANLA may feel insecure with regard to their decisions because of a lack of technical and legal support, and that not only companies may use it to contest decisions but that it could also be a legal hazard for them, in my interviews the employees of the ANLA pointed on the contrary the deficiencies of the studies provided by the companies. Nonetheless, the fact that companies were submitting bad studies was also considered as a way to test the institution, since the companies were understood as having the strategy of trying their luck with studies of the lowest quality possible that may still pass, and then adjusting their behaviour according to the response and observations (or their absence) of the authority which was therefore submitted to this test.

For an expert of the compensation group, the fact that the studies and compensations may not be great was also related to the necessity for the company to develop and strengthen an environmental department which would be capable not only of designing good plans, but also to do effective and practical territorial management:

[Las empresas tienen] que fortalecer un área ambiental y un área ambiental que tenga capacidad de hacer gestión de territorio, eso es. La compensación es gestión de territorio, compensación no es entrar usted en el computador y hacer el cruce de mapas y voy... eso es una cosa técnica procedimental, pero

¹⁶² Compensaciones ambientales por pérdida de biodiversidad, Área infraestructura, tecnología y productividad y ambiente, Diplomado virtual, Departamento de ecología y territorio Facultad de Estudios Ambientales y Rurales, Pontificia Universidad Javeriana. <https://www.javeriana.edu.co/educon/infraestructura-tecnologia-y-productividad/compensaciones-por-perdida-de-biodiversidad>

en realidad eso es gestión de territorio. Desde que usted está planeando su proyecto debería estar planeando dónde va a compensar, desde que usted está yendo a ver dónde voy a hacer la perforación [de un pozo petrolero] debería estar mirando a los lados a ver dónde de una vez: “aquí ah vea, este predio puede servirme para compensar”. (ANLA11)

And indeed, the difficulties encountered by the companies were often numerous and challenging. For example, during a meeting between employees of the ANLA which was focusing on the analysis of a road project in the department of Antioquia, one of the experts was quite surprised to find that a whole chapter of the compensation plan was focusing on the “difficulties encountered during the formulation of the plan”*, something that was quite unusual for the companies to do. Indeed, the company wanted to put forward the fact that their project was taking place in “a particular context that makes compliance with the deadlines set by the environmental authorities more complex”*:

Si bien esta complejidad representa un reto en la formulación y ejecución de medidas que representan un impacto positivo de gran magnitud por el estado actual de los ecosistemas del área, también significa la presencia de dificultades propias de una zona con una gran complejidad social y unas dinámicas económicas no necesariamente ligadas a la conservación. Las dificultades para el cumplimiento de los tiempos establecidos por la autoridad ambiental se relacionan con las siguientes dimensiones: sociales, económicas, administrativas y ambientales¹⁶³.

The social difficulties were said to be related to the fact that communities have had negative experiences with past projects of the company, “creating an environment of conflict” with them, and with the history of the armed conflict; the economic ones to relate to the proximity of the city of Medellín and the transformation of the use of the land and the lack and cost of rural properties; relatively to the administrative level, they were complaining about the “bureaucratic processes within municipal administrations [which] delay many processes that technically could be more agile”*; finally, they put forward their struggles to find the potential lands and landowners with whom they may establish conservation agreements, which delayed the possibility to do biodiversity studies of those areas, reason why they considered it to be an “environmental difficulty”.

Nonetheless, whether the issues were due to the problems were a problem of competence, emerging because of the complexity of the territory and the milieux in interaction or due to the administrative difficulties, and whether the environmental department of the companies is considered weak or strong, the struggle for implementing compensation was also often considered to be linked to difficulties of communication and agreement between the companies and the environmental authority, as it will be shown below.

6.3.2 Communication and understandings between implicit and explicit

While issues regarding differences of interpretation between the ANLA and companies happen with the norm as well as with the data, they may sometimes arise as well in relation to problems of communication or misinterpretation of what was said by one entity or another, and how the elements are understood to play out within the procedure or the legal consequences they may have.

For example, some employees of the compensation group of the ANLA had to receive the mayor of a small town near the newly built hydroelectric power plant El Quimbo, meeting that I’ve been able to observe.

¹⁶³ Plan de compensación por pérdida de la biodiversidad en el marco del proyecto “construcción de la segunda calzada túnel – san jerónimo UF 1 y UF 3, Proyecto autopista al mar 1, LAV0066-00-2016, Medellín, agosto de 2018.

The mayor came to resolve an issue that their town had with company managing the dam. The company, as part of its “compensation of the 1%” (see Chapter 4), had to buy a plot of land where the town would build a water treatment plant, but something wasn’t working. To explain the situation, the mayor phone-called the employee of the town hall responsible for environmental issues and put them on the speaker (the employee was waiting for the call, showing that they had agreed that the only way for them to resolve the situation was for the mayor to travel to the capital to go in person to the ANLA and then call them, so that they would be able to have a conversation that they wouldn’t have been able to have otherwise). The employee of the town hall explained that the lot was selected, that the company was saying that they had the money but that the ANLA didn’t approve the operation (so that the money invested would be deducted from what the company had to spend as part of their obligations for the compensation of the 1%). On the other hand, the people of the town hall were feeling in a rush because the owner of the lot had a cancer in a terminal phase as well as a family with numerous members, and that therefore they were anxious that if the owner was to die prior to the sale, things may become much more difficult.

Trying to understand the origin of the problem within the ANLA, one employee wondered if the delay may have been caused by late issues for contracting people, but doubted it because one sub-director had asked that the project be a priority. Their colleague, in charge of the evaluation of the project, said that there were some issues with the geographic data but that actually all the parameters of the plot to be bought had already been revised and accepted, and that this had been notified to the company. For the Mayor, the problem was that the company was taking too much time to request the monetary value of the plot to be evaluated, despite the fact if it was a key part of the validation of the investment by the ANLA.

The first employee of the ANLA finally said that they had to talk to people about the decision of the ANLA, because they thought that there was a “broken phone” somewhere, that is either a problem of the circulation of the information or of its interpretation. They therefore decided to directly call the person from the company responsible for the compensations, that they seem to know and already had their contact details. This person explained that there was indeed a problem because, while the ANLA has clearly approved the buying of the plot, the lawyers of the company considered that there was an ambiguity in the formulation of one sentence of the document issued by the ANLA and that they therefore weren’t certain about the approval, and that finally the company wouldn’t buy it if the lawyers couldn’t fully guarantee that the approval was given and that the risks of subsequent potential troubles were cleared.

This example shows how interacting milieux, diverging logics and interests as well as the uneasy articulation of distinct temporalities and constraints may emerge relatively to any aspect or moment of the procedures in which actors and bureaucracies are engaged, rendering visible the fragile arrangements over which the dispositif is based.

As the company managing the dam is also quite large and under scrutiny of both local people and international banks, it acts as a very cautious bureaucracy. In the end the most formal communication between institutions and companies happens through documents formulated or reviewed and then analysed by their respective lawyers. For the employee of the ANLA, the issues to be resolved comes from a lack of trust between the ANLA and the company, which may cause the processes to get stuck when there is the smallest ambiguity since none of the two institutions will want to take the risk to make any move not legally fully backed up. Here, this problem of bureaucracies awkwardly talking to each other was substituted by a direct interpersonal communication for clarifying and resolving issues that lawyers may be too cautious to do.

Similarly, in a meeting with another company who had troubles with finding the right place and strategy for their compensations and came to see how the ANLA could help them find a way out, the same employee of the ANLA expressed that, for them, it was much better to talk like they were doing, that this was how the evaluations should be done, that is through “talking between people who can discuss”, instead of bureaucratizing the evaluation and having only one person in front of a document. But they also said to the company that, while the proposal looked good to them, the problems to validate it were coming both from their hierarchy and from the norm (as it will be discussed in a further section). Therefore, whether by acknowledging constraints or discussing the possibilities, moments like those show that there is a sort of negotiation between the different parties about what the compensations should be, that is how and where it may be done, even if it is still subjected to a number of procedural, technical, legal and financial limitations.

For an employee of the mining company which project I went to visit, and who was describing to me during an interview what they thought of the evolution of the licensing process, the most significant change was the type of relations established between the environmental authority and the companies, and in particular the fact that there were now moments during which interpersonal communication was possible, something that they were seeing very positively:

La relación con las autoridades ambientales es mucho más directa, por ejemplo. El ejemplo más claro es cuando se solicitaba información adicional: antes uno no tenía la posibilidad de interactuar con los funcionarios, simplemente le llegaba a uno una comunicación solicitando toda la información que, los funcionarios que avalaron el proyecto, consideraban que hacía falta. En este momento, esa misma información te la solicitan en una reunión, que se llama “*la información de la reunión de solicitud de información adicional*” y uno tiene la posibilidad durante esa reunión de argumentar si está de acuerdo o no, con los requerimientos que le hacen, y en esa reunión también se genera pues como una interacción muy, muy cercana entre funcionarios y empresa. Lo mismo pasa durante la visita, cómo tú te pudiste dar cuenta, que se generan pues ciertas discusiones entre los funcionarios de la autoridad ambiental que realizan la visita y los funcionarios de la empresa pues que están tratando de licenciar el proyecto, y se solucionan pues muchas dudas al respecto. Entonces, eso ha facilitado mucho el proceso de licenciamiento con respecto a años anteriores. (...) Ahora, hay como la intención de escuchar más y de entrar como en un diálogo, antes no era tan viable entrar como en ese dialogo; entonces había como mucha distancia entre los funcionarios de la autoridad ambiental y las personas encargadas del proceso. (MiningComp1)

For the interviewee, this communication is very important because of differences of perspective that employees of the company and those of the ANLA may have, not particularly on the project itself but on the information describing it, so that the issue was to be able to provide explanations. This is therefore how they explained that the company was requested a higher-than-usual quantity of “additional information”:

La gran mayoría sí eran vacíos de información que presentaba el estudio que se había entregado inicialmente, porque la información ya estaba, ya tenía pues cierto tiempo de haberse levantado, porque en el documento no se explicaba bien. Vos sabes que muchas veces es complicado tratar de poner en palabras, en texto, lo que en realidad es y más que bien, las empresas en este caso nosotros, pues llevamos trabajando en este proyecto desde el 2013 y lo conocemos perfectamente, y cosas que para nosotros pueden ser completamente lógicas y obvias, para un grupo de personas que apenas se enfrentan al proyecto por primera vez, puede haber muchos vacíos. (...) Necesitan alguna aclaración adicional o necesitan simplemente que se explique mejor. Por ejemplo, no solamente presentar una

tabla o una figura con unos datos, sino por ejemplo hacer un análisis y sacar unas conclusiones. (MiningComp1)

The difference of interpretation is perceived as coming from the difference of familiarity with a project, reason why the interviewee considers that there should be an open dialogue established between the written documents and their interpretations on one hand, and about this articulation between people of the company and of the environmental authority on the other, so that they may reach a place of common understanding. For this reason, when the meeting with the experts of the ANLA organized at the end of their visit was about to end, the same mine employee declared to whoever wanted to listen that in their opinion the communication should and would continue:

Employee of the company 1: Seguramente el contacto que nosotros vamos a tener con el grupo evaluador no va a parar aquí. O sea, muy probablemente a ellos les va a surgir dudas, de algún tema de aquí en adelante hasta que tengamos la reunión de información adicional, y se los digo con toda franqueza, estamos abiertos a responder cualquier duda que tengan hasta esta reunión y incluso después. Porque como lo discutimos también en el campo esto es un proyecto muy complejo. O sea, nosotros lo vemos súper fácil entre comillas porque lo venimos trabajando desde mucho tiempo, y ustedes lo conocen desde cinco días. Entonces dudas se pueden presentar. Entonces el canal de comunicación siempre va a ser abierto. Yo no creo que tenga nada de malo pegar una llamadita ahí, "me vas a mandar una foto de tal parte" o "explícame esto, de la ocupación de cause que no entiendo", esto no tiene nada mal, o sea, no estamos violando ninguna ley que nos impida tener mas contactos que los del campo con respecto a este proyecto.

As they were expressing in a seemingly candid way their availability to answer any question that the employees of the environmental authority may have, especially as they knew (and had also expressed in other circumstances) that the project they presented was somewhat deficient and was perceived as such by the experts of the ANLA, they wanted not only to insist on the fact that there wasn't "anything wrong" with communicating and asking informally for complements, but also to say clearly that it wasn't illegal, even if that wasn't part of a usual procedure.

In the end, the mine project was rejected by the environmental authority (or, more precisely, "archived", which contrarily to a pure rejection allows the company to submit another request for the same project). But this rejection wasn't on the basis of unacceptable impacts in absolute terms, but because they claimed that they actually couldn't pronounce themselves over the project because of the lack of information. This was obviously not well received at all by the company, as shown in the letter written by their lawyers to appeal the decision and in which they were claiming that it would have been the responsibility of the administration to ask for any missing information during the suitable meeting for this purpose, that is the "meeting for the request of additional information". But the current form of the administrative process, which was the result of a reflection led by the institution as well as a number of trials and errors over the years, as one of the senior employees of the institution recounted me, was only allowing a single meeting of this kind and a short delay for the company to answer the requests. While this was aimed at "streamlining" a process which, as I've been told, was previously often too long, since the number of exchanges of information wasn't limited and that this led to unreasonable delays in the decisions which were unsatisfying for both parties, the current format does not allow for further information either to be requested by the ANLA or to be presented by the company. This is particularly problematic when additional information previously presented relate to things that were plainly missing or to a revision of aspects of the project, which in both cases can lead to subsequent missing

information. This shows that, classically, providing more information not only doesn't always give more 'answers' but can actually also open new questions, which implies to arbitrarily (at least from the point of view of some of the parties) foreclose the investigation as well as to forge arguments and make decisions with whatever elements are available (and agreed on).

Despite statements by some actors that direct communication definitely has some advantages, it also proved to be perceived in some circumstances as being either useless or quite troublesome. Indeed, while some companies seemed really disorientated with regard to the design of their compensation plan and were asking for some advice during meeting with the ANLA, other large ones have a very strong environmental department which expertise may challenge the one of the environmental authority.

This occurred in particular during meetings with the Colombian public oil company, which was seemingly complaining that their projects were not accepted because the ANLA was being too shy and ignorant. One expert of the compensation group expressed at some point that they considered that the meetings with this company became too personal, as they would sometimes come and tell them: "No, you don't know what sustainability is"* . Other times they would request to meet with specific employees of environmental authority, "because the last time with this person we agreed about such and such a thing"* . It was therefore becoming a matter of rejecting or choosing the employees at their convenience. A person guessed that their frustration may come from the fact that they were potentially discussing their plans with the Minister or high-ranking people and would therefore have troubles accepting that they may be rejected by the compensation group.

As the company had come to present one of their compensation projects, they also took advantage of the meeting to present one of their "voluntary" projects of conservation (which the ANLA therefore do not have to approve). One person of the compensation group later told me that they considered that the goal of this presentation was only to show to the people of the ANLA that they knew much less than the people of the company about these types of innovative conservation projects, therefore implying that they should let them do what they know best and not put obstacles in their way. Nonetheless, the person was also considering that it was true that they had a wide experience in conservation and that they indeed had a much concrete impact in comparison to what people of the ANLA were doing "from the office", and even if ultimately the oil company was quite likely more interested in facilitating social acceptance of oil exploitation than in the conservation of particular species.

The relation between the ANLA and the companies also proved to occasionally be or expected to be quite tense, especially during the highly formal encounters that are the meeting of request of additional information, for which each party brings its most competent experts and lawyers.

During one of those meetings, which concerned a project of extension of an airport, the ANLA staff was really uncomfortable because the project seemed very unclear and fuzzy to them. They explained for example to the company that there was really a problem with the scenarios they were presenting, and in particular with the taking into account of the extremes and the uncertainties for the evaluation of the impacts, and that it was both a necessity for the authority but also in their interest to provide the "best information possible", since they would otherwise have to take decisions based on the precautionary principle, and that those would likely go against the project.

With regards to possible compensations, the company in charge of the project for the National Infrastructure Agency had simply declared in their EIA that there wasn't anything to compensate because the project would affect neither "inland natural terrestrial ecosystems nor secondary vegetation, therefore, no compensation can be established as a result of the crossing of the intervention polygon with this type of ecosystem"*. But the experts of the ANLA considered that a good number of the studies they were presenting were botched, including with regard to the biotic characterization, which was not covering the area of influence nor considering the ecosystem services, the connectivity and the fragmentation of the ecosystems. The absence of compensation obligations was therefore for them absolutely uncertain.

Similarly to what was described elsewhere, the manager reminded the group evaluating the project before the meeting that they should not give advice on compensation nor mention a specific compensation factor nor be too precise in what the company should do because, if they were, it could be used against them by the company who may try to say: "you told us to do this way or that way", so to put the blame on ANLA for any issue. Their requests and comments therefore had to remain as limited and straightforward as possible. They had therefore decided to ask soberly the company to revise their document by presenting them the following request: "Requirement 50: submit the Compensation Plan for the Biotic Component"*.

The company accepted the request without contestations, which surprised the ANLA employees who had thought that it would be much more difficult. Indeed, they had imagined that the company would fight to avoid having to present a compensation plan and that it would appeal their request, because the company would repeat that there was nothing to compensate, and that they would have to present the arguments they had (needlessly this time) prepared to fiercely defend their position.

6.3.3 Shifting the basis of approval

An interview that I made with one expert of the compensation group of the ANLA was the opportunity to come back on the possible functions that the meetings requested by the companies with the ANLA to show their compensation project may have, and in particular to what the companies may be expecting from them and what their actual impact on the evaluation process was:

Las [reuniones] de compensación a mí me da la impresión que tienen un tono más de venta promocional, no explicativo, entonces eso yo creo que no sirve. Si son explicativas (...) normalmente no están (...) con el grupo que va a evaluar. O sea, yo para qué le explico a una persona que no es la que la va a evaluar? (...) Entonces digamos que, obviamente a veces la empresa no saben eso, de pronto sí quieren hacer una explicación y está bien, está bien, [aunque] yo no le veo tanto sentido a eso, pero en realidad (...) a mí me parece que, más que nada, ellos vienen es a promover, como a generar la recordación y a ejercer un poquito como de presión –sin entrar a calificarla, no voy a decir que es buena, no voy a decir que es mala–, pero sí a generar un poquito de presión para... (ANLA11)

For the expert, the intention of the companies is therefore to put some pressure or to befriend the evaluators, but this is not perceived as being a problem and the expert even shows empathy toward the companies and considers that it is their right to do so, as long as the limits remained clear. Companies may therefore try to 'sell' their project by showing they behaved like the 'good students', justifying their choices or explaining and generating empathy for their difficulties, which they hope could lead to less harsh evaluations or even obtain approvals in principle during the meetings. But the same expert later said to me that they

considered at the same time that these meetings didn't have any impact over the evaluation of the compensation plans. The company could receive some advice if they needed but the empathy they would generate if they were presenting their difficulties wouldn't take advantage over their duty to compensate, especially considering that it would often not be the same employees of the ANLA who would be present during the meeting and who would actually evaluate the plan formally submitted by the company.

In any case, and regardless of the actual extent of the consequences of those meetings over the result of the evaluation, what is important is to note is that a form of pressure *can* be generated, and that the knowledge about a project and the evaluation that is made can potentially be shifted through ways that are not linked to the production of facts about it but through the contextualization of facts and the appeal to the experience and emotions. This therefore also rejoins what was described above about the employees of the oil company showing off their expertise, and how it was understood that they potentially intended by the effect of contrast to lower the confidence of the people of the institution, which could in turn be imagined to lead them to have more confidence in what the company affirms in its documents, both in an absolute way and with regard to their own judgement.

As occurred during the meeting previously described between the ANLA and the representatives of a hydroelectric company who had to undertake a relatively small compensation, another thing that the companies seemed to be looking during the meetings is to reach agreements with the evaluators, in ways that would render the process of approbation of their compensation plan more "agile":

También quieren lograr acuerdos, [pero] esos acuerdos no se pueden lograr. Pero bueno, está bien, ellos tienen derecho a intentarlo, todo el mundo tiene derecho a probar. Y pues de pronto se les da, de pronto, en otro contexto, en otra reunión, con otras personas, ellos vienen y hacen lo mismo y la persona le dice "no, listo", pues puede ser. Pero en realidad pues, lo que ellos querían era como una aprobación parcial, ahí como: "sí, bueno hágale y vamos manejándolo y esto", pero pues digamos que no. (...) Lo que pasa es que no se puede, o sea, uno no puede generar una aprobación de una cosa que está solo en la cabeza de ellos, en realidad no están presentando nada concreto. Y porque después hay un problema y después es muy difícil hacerle seguimiento a eso y cualquier problema, pues ellos ya tienen la aprobación y... es grave. (ANLA11)

While the theory and practices of the Manual may differ, the same applies for the compensation projects, for which there may be substantial differences between what the plan affirms will be done and what is actually being done. Therefore, the ANLA employee expressed that the experience had shown them that approving something insufficiently defined could lead to intractable issues at a later stage of the evaluation or of the follow-up of the compensations. Nonetheless, they did not exclude that it may occur in some circumstances. Here also, the possibility of approval or agreement with regard to certain statements or propositions of the company may relate to issues of information in terms of quality, specificity and concreteness, but also to issues of procedure or to more practical considerations with regard to the practice of the evaluation and ultimately the maintenance of the possibility of valuation of certain propositions or actions in a given referential.

6.3.4 Discussing the appropriate articulations of informations and preoccupations

The last evening of the visit that the evaluators made to the coal mine project and that I've accompanied, a meeting took place at the request of the environmental managers of the projects, who were also in charge of the constitution of the files submitted to obtain the licence. At this point the EIA and its annexes had already been submitted, but the people from the company were anticipating requests of "additional information" from the part of the administration, which can involve doing further potentially lengthy studies. The legal delay between these requests and the time when the company have to submit the information is quite short (only one month that can be extended to two months) for doing analysis that can take a long time due to their nature (like the analysis of seasonal changes in rainfall for example) or for making complex changes in the project. Therefore, the employees of the mine were hoping that the evaluators of the ANLA may give them a few hints at the issues or bottlenecks that they were perceiving with regard to what they had been able to observe of the project during the two days of the visit, so that they could kickstart their work.

The meeting was quite formal in the sense that it took place in a room of the offices of the company and lasted about two hours, but informal because the discussions that took place had no legal basis or implications, and therefore nothing that would be said would be binding for anyone. The meeting was thus a particularly interesting moment to understand how certain types of impacts were problematized, qualified and discussed between the different actors. It gathered the experts of the ANLA who came to the visit, the leaders of the environmental matters of the company and the people of the consulting firm who was assisting them by doing the work in the field as well as the analysis and writing of the study. It was therefore the opportunity to see how the different actors were positioning themselves in their respective roles, which should each send out a certain message regarding their position and understanding of the project, as we will see.

As the discussions covered issues relative to many aspects of the project and of its impacts, many were also revealing the type of relation established between the employees of the ANLA and those of the company, and showed that considerations relative to the information of the environmental impacts assessment are embedded into numerous other considerations. For these reasons, I chose to include in the analysis presented here some discussions which went beyond issues relative strictly to biotic or biodiversity.

As explained in the description of the visit in the previous chapter, the company didn't present a compensation plan during the submission of their licence's request, as they were procedurally supposed to do, and the compensations were therefore not part of the discussions. I nonetheless come back in further sections on the work done by the ANLA's employees to review and analyse the compensation plan they later submitted.

The leader of environmental issues of the company already knew, because the evaluators were not hiding their concerns as they were walking around the projected coal mine site, that the project had some issues, so they wanted to be able to determine their best strategy to be able to overcome them, without losing time trying to improve aspects that should be revised altogether. They therefore wanted to be able to ask each of the experts of the ANLA to clarify what seemed the most problematic for them in their respective 'component', so that them or their colleagues may be able to detail the reasons behind some of the choices made, as they expressed when they introduced the meeting:

Employee of the company 1: Acá me gustaría que entre todos podamos determinar de una forma general, antes de la reunión de información adicional, los temas sobre los cuales tenemos que concentrar recursos tantos económicos como humanos. (...) Con las conversaciones que hemos tenido en estos días y medio de visita, es que hay que revisar toda la información que pide los términos de referencia. (...) El más probable es que van a decir que estos vertimientos no se pueden, entonces mejor no perder tiempo haciendo más estudios pero concentrarse en alternativas. En el tema biótico, [me gustaría saber] por ejemplo si [el biótico de la ANLA] nos dice que tenemos que concentrarnos en el tema de las coberturas, y sacarle el cuerpo del bosque ripario para las vías, o [si propone] otra solución... (...) Ustedes de la ANLA quieren tomar la palabra?

The leader therefore expressed some doubts about aspects of the project and presented the situation of the company, and in particular the limited time they had. But they also suggested what they thought the people of the ANLA may be considering, by referring to what they would “likely” say, so to verify with them if that it was the case and see the type of alternative that the experts of the ANLA would find acceptable or if they had any suggestions to make.

This type of dynamic involving suggestions and expectations of answers emerged on many occasions, the different actors seemingly going toward one side of the frontier between explications and negotiations or to the other. For example, the experts from the ANLA had issues with the infrastructure planned for draining the rainwater from the site of the mine to the nearby creeks, but they were agreeing that the company would be able to propose alternatives. The problems were both the large amount of water that was planned to be released in a relatively small creek, and secondly that the infrastructure would cross riparian woodlands (i.e. woods on the banks of small streams that protect them), something which the ‘biotic’ of the ANLA was considering impeding, therefore forcing the company to see how to avoid impacting it:

‘Physical’ of ANLA: Cómo lo vimos hay que pasan por bosques riparios y sería muy importante ver qué alternativa hay para reducir el ancho de la ocupación de la vía.

Consultant: Entonces hay que tratar de mirar si logramos que el lugar, sí es un lugar muy ancho, ver si puede tener un impacto más angosto sobre el bosque.

Employee of the company 2: Para el diseño y los trazados que nos hicieron, eso fue exactamente lo que se busca: los sitios donde menos impacto causara sobre la vegetación que se tenía.

‘Biotic’ of ANLA: Pero no pueden ajustar el diseño? Haciéndole un corriendo de la vía. Porque si tienen la posibilidad de correr el diseño deberían hacerlo.

Consultant: Mira, por ejemplo en este punto no iría, yo me corro hacia el límite de acá. Pero acá por ejemplo es imposible, tengo que cruzar en alguna parte de todo esto.

‘Biotic’ of ANLA: Dónde haya un cuerpo de agua de pronto habrá que reducir pues la afectación. Pero, sí se puede, también salirse, pues hacer el realineamiento, y es una mejor cosa el realineamiento porque prácticamente los bosques de galería son áreas de exclusión.

Employee of the company 2: Y hay otra cosa es que en no todos los drenajes hay bosques galería, y con [el ‘Físico’ ANLA] vimos varios que simplemente son drenajes a un potrero.

‘Biotic’ of ANLA: Exacto y en esto no hay problema. Si por una carretera nacional se puede hacer realineamiento aquí se puede hacer. Es solo cambiar eso, hacerlo un quite al bosque porque es que realmente esos bosques que están bien conservados, que tienen especies que están en vía de extinción o en peligro... Entonces toso este tipo de cosas lo hemos visto con [la gente de la empresa] pues.

After the first remark by the ‘Physical’ of this extract, the consultant recoded the remark in relation to what relates to their own preoccupation, which is to find the exact problematic places and orient the reflection

toward a proposition resolving the issue raised. But the employee of the company then said that the current design already represents the option resulting from taking them into account. The 'Biotic' from the ANLA nonetheless recommended that they should change it if they could, therefore strongly suggesting that the current design may be unfavourable to their project, but the consultant then aimed at demonstrating the difficulty or impossibility to find alternatives. Insisting again, the 'Biotic' didn't seem to accept the arguments, and then switched to a comparison with the national roads which manage to make changes to their designs despite their higher constraints, therefore showing that the company should be able to do it too, especially that it is "just about doing this" and not more. They then put in perspective the request they were making with the valuated properties of the woods, including their position relatively to a stream, a particular state of "conservation", the presence of certain species which may be represented within systems of classification designed to indicate that they are threatened.

This dialogue therefore shows the translation of the same theme according to the point of view of the different actors, and the references to valuations of a certain type of forest and of possible solutions according to what is considered possible and desirable. Levels of comprehension of the project, importance of certain areas, acceptability of the impacts, power to impede certain activities as well as opportunities or impossibilities to make changes to the original plans are all successively put in regard with one another within a process aiming at valuating, prioritizing and agreeing the different articulations between problems and solutions.

The same circulation could be observed again when the case a road which would also cross a riparian wood was discussed. In this sequence, a person of the company expressed the different things they had to take into account, including the users of the road and the closeness to the mine, presenting the alternatives they had evaluated and what they did when they could to limit the impacts, but also the remaining impacts when it hadn't been possible to avoid them:

Consultant: Yo tengo una pregunta: entonces si no tomaron la opción de ponerla por acá fue porque porque estaban...?

Employee of the company 2: Pero es que esto va a ser una vía que va a utilizar la comunidad y eso hay que tomarlo en cuenta, entonces tampoco yo la puedo meter mucho mi zona industrial porque tiene un tema de riesgo importante. Entonces por eso se pensó alejada de esta zona, y dentro de las alternativas que evaluamos y evaluamos tres opciones y estará como... Incluso mira acá (showing the map), que incluso acá lo hicimos el quite [al bosque] (the 'Biotic' of the ANLA shows their agreement), porque se lo podíamos hacer. Pero [para este otro cruce] buscamos como la franja más delgada [del bosque]. Igual se le puede seguir buscando, pues de pronto acá, no sé, se puede seguir evaluando cuál sería la parte donde se pueda cruzar.

'Biotic' of ANLA: Es decir es decir donde menos sea denso sería allí donde se puede hacer el cruce. Y si lo hacemos disminuyendo pues la calzada? (...) [Hay que mirar] también de pronto si yo fragmento cuales soluciones tengo para esa conectividad alrededor de estos [cruces].

Employee of the company 2: Si, los temas de paso de fauna...

The importance given to specific impacts and the possibilities to accept them are therefore not inflexible, but depends on a process of resolution which goes back and forth between rendering impacts and solutions possible or impossible and of articulation of a common understanding between the different actors over the constraints and what they prioritize or should prioritize. Each statement by the people of the ANLA was then translated by the employees of the company or of the consulting firm into actions that they thought should be taken in order to respond to the demand, so to hear the reactions from the people of the ANLA to those propositions.

This reciprocal adjustment to opening and foreclosures of themes and issues is well illustrated in an extract of the meeting in which the ‘Biotic’ expert of the ANLA makes further observations while the environmental leader of the company had thought that they were done with the part relative to the ‘biotic component’:

Employee of the company 1: Listo entonces en el tema biótico nos enfocamos en el tema de flora y especialmente en los bosques riparios y el tema de fauna asociada.

‘Biotic’ of ANLA: Y otra cosa es que tenemos allí, ve acá (they show the map): hay vegetación secundaria, hay poca pero esta zona es una zona de paso de fauna, de aves migratorias, donde esta zona estable, es decir hay mucho pasto, y porque hay mucho pasto realmente como usted lo muestran, el 56 por ciento son pastos arbolados, pues lo que hay allí, limpios o arbolados, entonces lo poco que hay de vegetación secundaria debe tratarse manejar, y apoyarse mucho con los biólogos en ese sentido, porque esas especies descansan, un momento, y continúan su recorrido. Entonces es de importancia para las aves.

Employee of the company 1: Entonces digamos el tema de flora y fauna en general como parte del componente biótico.

Consultant: Pero entonces acá, algo que... entonces vamos a hacer venir los biólogos para instalar cámaras y hacer todo eso para empezar a hacer el análisis de fragmentación y de conectividad ecológica (the ‘Biotic’ of ANLA approves, loudly saying “si!”) y eso lo tenemos claro y se va a hacer y se va a entregar.

Here the ‘Biotic’ expresses a new concern, through articulating on one hand a cartographic representation supported by quantitative data and on the other previous knowledge of the behaviour of migratory birds. For them, while secondary vegetation is usually regarded as not important, the fact that a minority of non-pasture areas remains along with the fact those areas may be used by birds to rest in their migratory trip, raises their potential importance and the need to further investigate them. As a response, the employee of the company therefore expanded what they considered to be the necessary focus of its team to meet the demands of the ANLA, from a specific type of ‘flora’ (the riparian woods) and its associated fauna, to the generic theme of flora and fauna. For the consultant, the preoccupation is again more to answer the ‘Biotic’ in technical terms, which is what they are the most focused on since they have to organize the coming of specialists to do particular studies, and they therefore want to see if the particular orientation proposed will correspond (in the sense that it will generate ontologically and epistemologically appropriate data) to the preoccupations that the ‘Biotic’ was expressing. This type of interaction, in which the specialist of the ANLA expresses a concern that other actors then interpret or decode, and then translate or recode according to their perspectives and what they want to convey, reproduced itself at various moments of the meeting. But, in many cases, the employees of the ANLA were also asked some advice regarding the specifics of the EIAs, like the way local communities should participate and how it should be registered, or the definition of the areas of influence (see Chapter 8), for example.

As we’ve seen, the experts of the ANLA were sometimes put in the uncomfortable position of having to somewhat teach the company some rules to follow (including “common sense” rules, see the section below on limitations of the norm) as well as counselling in more particular questions, without being too specific nor give their most frank opinions. But, in some cases, the vagueness of the comments didn’t seem sufficient for the message to be carried across, and they had to resolve themselves to be either clearer or more specific. For example, at some point during the meeting the ‘Physical’ of ANLA wanted to make sure that the people of the

company would understand that they shouldn't minimize impacts, although by seemingly talking about another project or in a general way:

'Physical' of ANLA: Una sugerencia es que para la zonificación den el nombre que es. Las zonas que son sensibles son sensibles, las que son de importancia ambientales igual. A los impactos no tapemos el sol con un dedo, si? Porque no tiene sentido. Es un proyecto que todos sabemos que eso tiene impactos significativos. Entonces de todos los impactos, son cincuenta impactos, y entonces solamente el único impacto significativo es la generación de empleo. Y los otros son moderados, o bajos. Pero no lo estoy diciendo de ustedes.

Employee of the company 2: Ah, que susto jajá..

'Social' of ANLA: También con la descripciones de impactos sociales, como las "presiones de acceder a los recursos, que son empleos temporales y tal, y por eso les vamos a dar capacitaciones" ... O sea hay frases que no dicen...

'Physical' of ANLA: Si no oiga: diseñan fichas que toman en cuenta los impactos, con cosas que realmente apunten.

While the 'Physical' talked generally, even specifying that they were not talking about the specific case of this mine, the 'Social' pointed out concrete shortcomings, which allowed the 'Physical' to finally say out loud the recommendation they wanted to pass on in a more subtle manner. As it was generally the case with the communication that they had with the companies, the employees of the ANLA ought not to get too implicated in the design of the project or too specific in their recommendations, so that the companies could use those as arguments to later oppose to the institution. Their opinions were supposed to be limited to interpreting the existing information or to point out the deficiencies of information, but not adventure themselves in criticizing specific actions or advocating specific solutions. In this sense, the different actors are valuating their participation in the process according to a wide range of preoccupations, including their appropriate position with regard to the determination of different types of coherency between problems and solutions.

Similarly to the preceding example, when the 'Social' expert of the ANLA considered that the people of the company and the consultants were not adequately understanding and taking into account what local communities were expecting from the consultation process, and their perception of it, they therefore resigned themselves to detail what they considered should be done:

'Social' de la ANLA: después de lo que digo, ustedes son libres de proponer la metodología que quieran. Lo que estoy diciendo es la importancia que ellos no desconozcan el antecedente del mismo proyecto, que tengan una información de base, con las actualizaciones, y por otro lado el hecho de que ellos se preocupan que su participación sirve de algo y saber que si se evaluaron los impactos y que realmente ustedes sean consecuentes y que les van a atender de una o otra forma. Eso es la coherencia que se tiene. No es solo actualizar la línea base para actualizarla, sino ver como esta línea base contribuya a la lógica del estudio y ver si realmente contribuyo a cambiar el plan de manejo tomando en cuenta lo que ha pasado todos estos años.

In this extract, the expert portrays the way they understand that the local community perceives what would be a "coherent" way of addressing and putting into relation their preoccupations, the information produced about those and then their management. On the other hand, they also suggest to the company that the studies they're going to do should not only be a way to comply with legal obligations, but also an opportunity to give a more careful look at the preoccupations of the communities. Therefore, the "coherency" of impact evaluation and management that the expert described seems to embed itself into other coherencies,

like the one of the attitude of local communities, of the company or of the ANLA as institutions but also of the 'Social' expert themselves is their role, each of them "being" coherent and rendering coherent the processes in which they take part. Coherencies at the various levels therefore describe not only what normative obligations are, but also ways in which problems *should* be processually treated and the position that each actor *should* adopt in the process.

The meeting was also a moment in which the people of the company tried to assess their degree of freedom with regard to the process within which the information is evaluated, and which has guidelines varying in flexibility. For example, one of the procedural questions that people from the company had was whether they would be able to make modifications to the project as part of the new "information" submitted to answer the authority's request for "additional information"¹⁶⁴. Another question focused on whether a more detailed socioeconomic analysis could be provided after the obtaining of the licence, which the 'Social' expert answered with an incredulous "no". But because the company had a very limited time to do the studies, they wanted to know more specifically what should be prioritized, even though the experts of the ANLA were reluctant to say that some things were more important than others:

Consultant: Tuve miedo, pensaba que se iba a acabar la reunión y dije: "no no no, yo tengo otras dudas!".

Yo quiero que quede claro en la mesa, y si es posible hablar de la caracterización de la línea base, entonces dejas para unos monitoreos físico, químico, de calidad y ese tema, de agua por la afectación, o probable no se como va a ser, por el tema de los vertimientos. Si me hago entender? Como dice [X], hay que optimizar el esfuerzo. Pero si ustedes dicen "hay que hacer y entregarlo", pues allí sabemos que hay que hacerlo. Pero para no equivocarnos...

Employee of the company 1: Estos monitoreos toca actualizarlos, porque hacen parte de la línea base.

Lo que pasa es que no sería prioridad en este momento. Podríamos actualizarlos posteriormente. Pero si tenemos que ver para tener claro lo que vamos a hacer en el campo a partir de esta semana.

Consultant: Si exacto, por si dicen que "si es importante, de verdad necesitamos que lo actualicen", uno ya sabe, pero si no... Porque hay unos [estudios] que se demoran mucho.

'Physical' of ANLA: Yo les digo que en la medida que ustedes tengan todo más completo, más bien caracterizado, a veces... pero eso es importante...

Employee of the company 2: Si, pero hay unos parámetros que si nos demoran mucho y es lo que nos preocupa un poquito, no alcanzarlos a tener aquí...

'Physical' of ANLA: Pero de todas formas es diferente sabiendo que es solo de línea base y si son necesarios. Y pues tienen ya un carácter... Siguen siendo muy importantes y relevantes pero ya no están dentro de la toma de la decisión en aspectos tan relevantes dentro de la operación minera como es el tema del vertimiento.

Employee of the company 2: Es más como para tener lo que me mencionaban también, como: "cúbranse muy bien en salud ustedes antes de empezar el proyecto para que no les pase lo que pasó en Cerro Matoso", que ellos decían que por ejemplo les dijeron: "hagan monitoreo de esto esto esto antes de...", pero no hicieron caso, ahorita llegó la demanda y pues no tenían de que pegarse para defenderse.

¹⁶⁴ This relates to other debates regarding the necessity for existing projects to ask for new licences when the plan to have their project extended or modified 'substantially', or if a simple declaration of the changes is acceptable. In both situations, the problem is to determine whether the changes are substantial or not, and what does a substantial change means, because, in the discussions that I had with people of the ANLA, they were often suggesting that the environmental authority were too lax with companies (which were themselves just trying their luck), and accepting changes to their projects without requesting an environmental impact assessment and evaluation of the consequences of those changes.

This exchange first reveals the dialogue that is established between the valuation of impacts and the evaluation of the possibilities to make changes and of the temporal constraints to make further studies, but also the aim from the people of the company to understand what really matters for the ANLA, that is the type of information that is the most important according to the way they prioritize some aspects over others beyond what the guidelines are indicating. Indeed, while an expert of the ANLA insists on the necessity of providing all the information that is part of the basic requirements, they admit at the same time that all the information doesn't have the same status, because according to specific themes (here the implementation of a mine), some issues are deemed more crucial than others and the information necessary to understand them is therefore more crucial as well. But, beyond the production of information used to evaluate specific impacts, the last intervention also shows that it can be decided by a company to strategically produce certain types of data aiming at demonstrating an absence of impact, in this case for protecting itself against future recriminations coming from the local communities.

6.3.5 Flexibility and inflexibility of the evaluation procedures

Another meeting, concerning compensations for biodiversity loss related to impacts generated by small maintenance activities over an old hydroelectric power plant, had been particularly interesting to observe. Indeed, despite the relatively small compensation of about 5 has that they had to undertake for an impact of 0,83 ha of land, the employees of the company described their struggles with the design of the compensation and expressed their frustration with the process. This led to interesting discussions relatively to the quantity and quality of the information that the employees of the ANLA were considering necessary for them to emit an opinion or make a decision, as well as to when in the process could these formal opinions and decisions be expressed and to which extent informal ones could be communicated to the company.

The meeting took place in a small room of the ANLA. The company, who was represented by one of its employees accompanied with the external consultant in charge of designing the compensation plan, was received by four people of the compensation group of the ANLA.

The visitors started by saying that the goal of the meeting was to present the process they had gone through in order to select a number of alternatives for the compensation and that they wanted the opinion of the ANLA over the different sites they had selected. They had previously submitted the same information along with the licence's request for their project, but the ANLA had rejected it, and the consultant of the company recalled the process and expressed their disappointment:

Consultant: La empresa propuso: vamos a buscar un área que cumplan las siguientes condiciones: que tengan equivalencia ecológica, que esté dentro del DRMI, y que se cercano preferiblemente a las áreas de la empresa para que se integren en un solo bloque, se facilite digamos la regeneración natural. A esa propuesta la ANLA en la resolución dijo más o menos que no lo aceptaba porque la ley decía que se necesitaba las coordenadas del lote en el que se iba a hacer la compensación. Entonces había que definir las coordenadas de del lote dónde se va a hacer las compensación. O sea aceptar los criterios pero... Eso es una de las tareas que iba a ser en la selección del lote que iba a cumplir con los requisitos.

ANLA employee 1: Puedo interrumpir? Hay que entender un poco el contexto: si la ANLA no sabe dónde se va a hacer, la ANLA no puede decir que se puede realizar la rehabilitación.

As their intervention made manifest, the consultant was confused with the seemingly contradictory requests to present a “definitive compensation plan” with the licence on one hand while on the other being also given the possibility to send just a proposal to have the opinion of the ANLA, as long as the uncertainty of its realization was silenced and that it was presented as “definitive”. Somehow, it seemed that the issue came from the fact that the consultant was so attached to some parts of the process as they were described in the Manual that they found themselves in a logical paradox which led them to an impasse.

The person from the company and their consultant then presented all the criteria that they used to select the potential areas for the compensation. They considered that an appropriate one had to be in the same orobiome and have ecosystemic equivalence, and that would preferably be: within the Integrated Management Regional District (DRMI, that is land identified as priority conservation areas by the regional environmental authority), in the same or adjacent hydrographic sub-zone, preferably in the same municipality, within the polygon of interest of the hydroelectric power plant or in its vicinity, and if possible bordering the land that the company already owned. They also finally wanted to privilege an area highly intervened, in order to contribute to the rehabilitation of ecosystems within the DRMI.

While all the criteria were presented through different maps, since they are all geographical in some ways, that is that at least one of their properties can be geographically represented, they actually relate to totally distinct preoccupations and ways to perceive the qualities of the territory, at the frontier of ecological, administrative and physical geography categories. Nonetheless, reducing them to a geographical component so to put them into a unified geographic space of calculation erases their other properties and how they may relate to distinct processes. Indeed, for the consultant, the most challenging criteria for finding the appropriate area to do the compensation was to know whether there was equivalency as well as the issue of land ownership, which added another set of constraints of a different nature:

Consultant: Algunas dificultades para encontrar terrenos y eso es muy importante es un área bastante complicada y fue bastante complejo para la hidroeléctrica obtener de los predios y tener esa preselección. Hay problemas de propiedad, de informalidad, de presencia de la gente. (...) Y además un problema muy grande son los problemas de tenencia, y más en esta zona que es de tradición, con contradicciones entre lo que dicen las escrituras, lo que dice el folio de matrícula o el catastro.

Their colleague from the company added that despite these difficulties it was still possible to negotiate, because there were at least “people with whom to talk”. The consultant acknowledged this fact but considered that it was still very difficult to find the owners of the properties, when that had proper owners, because sometimes it depended on old agreements, and, when they existed, to find some willing to sell their properties at a normal price and not at a “price for the company”. But the company also didn’t want to buy or do study of areas which weren’t validated by the ANLA, because they feared that then their money or their work may have been spent or done in vain if the areas were later ruled incompatible by the ANLA:

Consultant: Una cosa que se plantea en [la empresa] es: “yo tengo un predio y voy a hacer todo el inventario y línea base para tener unos indicadores, pero qué pasa si compro el predio le mando la línea base y me dicen ‘no’? Entonces pierdo todo el trabajo. O la ANLA me dice que sí pero yo no he negociado porque no puede negociar diciendo que le voy a comprar un predio que la ANLA no me ha dicho que este predio es válido. Entonces recibe toda una caracterización que digamos para pasar a las etapas siguientes, que es hacer la caracterización de línea base en detalle

e implementar los trabajos planteados, pues tendríamos que tener el aval de la ley que el predio es válido para hacer la compensación y adicionalmente pues negociar el predio". Es un poco por eso digamos la expectativa es la aprobación de ANLA..

This imperative to have an agreement was even a way to blame the environmental authority for the lack of advancement of their work, along with a sort of attempt of blackmailing of the institution:

Consultant: Ojalá los cinco predios tienen equivalencia ecológica y así la empresa puede venir a negociar con ese, pero si no puede con estos puede con los otros dos, y si no... Para que vayamos a abarcar porque en esta reunión vamos avanzando porque sino en dos meses volveremos y ya [los propietarios] no quieren negociar... En cambio si aquí vemos que los cinco predios tienen equivalencia ecológica, sabemos que tenemos que hacer cinco hectáreas y que vamos para rehabilitación, pues digamos le queda una ventaja para ir a negociar y hacemos más expedito el proceso.

The people of the company repeated various times during the meeting that they would not do anything without the approval of the ANLA (whether investigating the areas, doing biodiversity analysis or topographic surveys, making agreements with the owners and even less buying the lands), that they were "just waiting for it" to go ahead, and that they were hoping or even requesting to have the opinion of the ANLA right away, so to be able "to start negotiating immediately, and not to have to repeat this meeting".

On the contrary, the employees of the ANLA considered that they needed more information (or 'the' information) to be able to pronounce themselves, and that in any case the validation of areas of compensation could absolutely not be done during a meeting in an informal way, let alone in a formal way, and a large part of the discussion between the people of the company and those of the ANLA was on whether a single point or a polygon given in the form of a GDB was necessary to evaluate the ecosystemic equivalency and the aptitude for the area for the compensation:

ANLA employee 2 (talking to the people of the company): Pero aquí no dieron de GDB ni nada de eso?

ANLA employee 1: Tienen que mandar la GDB de los cinco predios. Deberían haberla mandado.

Consultant: Esta la ubicación geográfica, un punto, pero no esta georeferenciado todo porque eso el levantamiento con todo detalle no se ha hecho. (...) Mira, que es lo que se busca con la equivalencia ecológica? Que se presente un punto, para que no vaya a hacer una compensación de un bosque no seco tropical a un bosque seco tropical porque seria [erróneo]. Lo tengo ubicado para [que la ANLA diga que] "lo que me estas diciendo si es". Listo, si les pongo el punto: "aquí queda el lote", usted tiene para decirme: "sí, presénteme la información, los linderos, el área, la línea base, porque ya se que esta allí, o sea que es este punto".

ANLA employee 1: Pero cuando se evalúa el plan como plan, que es algo, algo mas, mas hecho. [En este momento] claramente no nos podemos llegar a la promesa que sera esta area, y nunca se pide porque es evidente que la empresa no puede hacer eso. Para los polígonos no se necesitan tampoco un levantamiento topográfico, (...) pero si nosotros necesitamos el área. Y necesitamos tener una caracterización básica. Por ejemplo usted pueden comprometerse a que van hacer algún tipo de parcela ya detallada después, pero sí yo no se las coberturas ni donde lo van a hacer yo como se que es una real equivalencia ecosistémica? O sea como se que si realmente es un predio que tiene potencial para la rehabilitación? No tengo con que comparar.

Consultant: A ver. Muchos de estos predios no tienen levantamiento catastral, porque es una zona muy informal en las posiciones y en los títulos. O sea no es chiste. (...)

ANLA employee 3: (...) No tenemos la información suficiente, por ejemplo para decidir si esa área permite hacer una rehabilitación o no se requiere la rehabilitación, con un solo punto. Va más hacia el norte, al este, al oeste, es el punto central del predio? Hace falta como mucha información

como para que nosotros podamos definir si definitivamente cumple con los requerimientos que va a tener el plan que ustedes mismo se esta proponiendo.

ANLA employee 1: De hecho una de las solicitudes es "deme la viabilidad del predio". Pero no presentan predio.

Consultant: Yo no se si podríamos llegar a como una solución intermedia, porque toma tiempo hacer un levantamiento, la información catastral no es fiable...

ANLA employee 3: Pero es un acercamiento a la información que nosotros nos permite hacer una evaluación de eso. Y se puede aclarar en el documento que aún no se tiene el cien por ciento de la certeza...

ANLA employee 1: O sea ustedes pueden generar un polígono donde me dicen "esta es la área de compensación", aun si después se puede que sea mas o menos.. Pero si necesitamos como un área.
(...)

ANLA employee 2: El mensaje es: no puede ser solo un punto.

As shown in the discussion, the employees of the ANLA were requesting a polygon and the ecological description of the area, which was in their view the only way to know ‘where’ it was and what its vegetation cover was, which are the necessary elements to evaluate the ecosystemic equivalency and the restoration potential of the area. The idea was at first to have enough information so to be able to make a comparison between the impacted area and the one proposed for the compensation, but as the discussion went on, and that the consultant was repeating its reluctance, they finally expressed that while they were requiring information with given properties and levels of details, this information could be vague at the same time with regard to the exact location of the area as well as with regard to the ecological description of the area.

Therefore those exchanges show that the experts of the ANLA considered that it was better at this stage for them to have some information about an area which may not be the right one than no information about the right area, as if the evaluation process had to be fed with data to chew in order to reach the next step. In this sense, the information that was requested here didn’t have to be particularly reliable. This points out that, during stages of the evaluation process, the information required has a status that goes much beyond its existence or inexistence, as it can actually exist in a variety of intermediary states depending on its source and interpretation, as well as have different levels of precision, adequacy, truthfulness and uncertainty. Very uncertain information can nonetheless be evaluated *as if* it was absolutely accurate, because even if the employees of the ANLA admit that “it doesn’t have to be 100% certain”, or that it can even be partially invented, the evaluation done doesn’t explicitly take into account this uncertainty of the proposition.

While the employees of the ANLA said that more information is required, even if the Manual doesn’t actually specify the level of detail required, it seemed to be more a matter of form than content. In some occasions, the level, type and quality of the information can therefore be informally agreed between the company and the ANLA, and according to the stage at which the evaluation of the compensation plan is at, even if formally the information doesn’t have status and just has to be provided.

On the other hand, the consultant didn’t seem to accept or trust or be able to hear what was informally said to them, and in particular the fact that the information the company has to provide can be approximative, and another issue was coming from their lack of trust in the process itself, and particularly on the way the ecological equivalency was defined. Not satisfied with the current way of proceeding, they therefore looked toward the possibility of an “intermediary solution”, which would have been the informal approval of their areas, something which the technicians of the ANLA refused to do. The latter were therefore accepting to do

a formal evaluation of uncertain information, while considering at the same time that giving an informal opinion was unacceptable.

As the time slot during which the meeting room had been booked was ending and that people were waiting outside to use it for their own meeting, but that the discussions still hadn't been concluded, the person from the company, the consultant and one expert of the compensation group kept talking for about twenty minutes in the corridor. This situation was interesting, because it seemed to be largely raising the perceived level of informality of the discussion, something that was seemingly desired by the people of the company but as much by the people of the ANLA. They started by roughly repeating their positions: for the expert of the ANLA, the article 5.4 of the Manual was clear about the fact that a characterization at the scale of 1:10 000 was required, while, for the consultant, presenting, as the Manual was stating, a definitive plan which didn't have to actually be definitive didn't make sense. Fearing the deadlock, the consultant asked: "So, how can we find a way out?"*. Then, apparently starting to lose patience, they put forward the fact that the compensation was so small that no satellite image had this level of detail, so that the only way to have information about the areas would be to go visit them, to finally conclude exasperated that it was really a headache for something that was actually "a compensation joke. There are compensations of one hundred or two hundred hectares, that's five hectares, it's not even a recreational farm!"*.

In order to free themselves to give further recommendations or indications to the company but without taking any legal risk, the expert expressed that they usually say at the beginning of all the meetings that "the ANLA only issues decisions by means of administrative acts, which may be orders or resolutions, and that meetings are not administrative acts"*. They were then able to pursue:

Normalmente, nunca se ha dicho: "no, no lo acepto porque de pronto no hizo tal cantidad de [estudios]", pues dependiendo de la línea [de acción]: si usted va a hacer conservación de hecho si tienen que hacer caracterización detallado, pero si hacen rehabilitación digamos que en el mapa de cobertura uno ve que efectivamente esta el potrero y acá se va a hacer restauración o rehabilitación. Ya dependiendo de la línea que vayan a hacer pues lo pueden hacer simplemente con imágenes, con fotografías, con información secundaria, o de pronto con lo que hayan tomado en el EIA si lograron llegar hasta allá. De hecho en eso somos incluso un poco laxos: como les digo la norma que tiene el ministerio es clara en que cuando se presenta el plan se presenta con una caracterización detallada a escala diez mil, pero nosotros a veces sobre este tipo de cosas entendemos que se puede mirar de otra forma, pero si se necesita un polígono y una caracterización.

The informal advice given to the company, that was requiring the disclaimer of liability stated previously, was therefore the following: depending on their proposed compensation activities, not all the information said to be required in the Manual was actually required by the ANLA, which is said to be somewhat lax on the matter, and thus the information provided could well be approximative and not be the product of biodiversity studies but of images or secondary information (which can be what local people may say that there is in the area, or other sources). Here again, what the expert of the ANLA said to be mandatory was a polygon and a description of the area that it circumscribes. But the ways the polygon is drawn as well as the material serving as the basis for the description are said to potentially be easily ignored, because they "sometimes understand that this kind of thing can be looked at in a different way"*. In some cases the quality of the information and the inaccuracy of its level of detail can therefore again be ignored, or some ignorance can be produced about it. Interestingly, this contrasted with what an expert of the ANLA told during another meeting to people who

were also unsure about the what was asked of them that “the requested plan is a plan, it is not an idea”*, and that therefore they “should do the things well, because if we see that you did it only halfway...”* (implying that they would not appreciate). Therefore, and it will be further shown later in relation to normative injunctions, it is in many cases possible to be both flexible and inflexible.

Despite the details of the expert, the consultant asked again whether the expert of the ANLA was thinking that one of the areas presented for the compensation “could present any characteristic which would make its ecological equivalency to be rejected?”*. This led the embarrassed expert of the ANLA having to make circumvolutions to say that normally it is not so difficult to determine it but that, without saying that it applied to their project, in some cases in may indeed be quite complex and that therefore only a detailed verification could allow them to tell whether the areas are equivalent or not. A few minutes later, seemingly not accepting the previous refusals, the consultant came back again with basically the same request, this time hoping that the expert could evaluate whether the “point” that would be sent to them had ecosystemic equivalency, because it was really too complex, or if they could at least review it together. But the expert expressed this time much more firmly that no, partial approbations or evaluations were not possible, and that no, they couldn’t review it together.

Nonetheless, as a sort of compromise, the expert finally proposed to the consultant to formally submit approximate polygons of the possible areas to the ANLA as part of the submission of their compensation plan, and even if the rest of the plan is speculative, in order to get an official response from the ANLA about the plan in general, and hopefully (but without certainty) about the validity of the areas in terms of ecological equivalency, thus somewhat subverting the rigidity of the steps of the process of approval of the compensation plans.

After the meeting, one of the experts of the compensation group told me that at some points they were almost laughing out loud because of the people of the company getting so worked up over what the expert considered to be such a ridiculously small area of compensation. Interestingly, as I then asked the expert if they could forward me the PowerPoint presentation used by the company, and that was sent to them, they told me that they didn’t really give it to me because this project was really not good and not interesting, that they didn’t see the point of me working on it and that it was better to move on. They considered that the people who made the presentation didn’t understand what they had to do, and that “it wasn’t a good example” (a good example being for them in reality an example of a good compensation), whereas for me the interest is to see what they understood that they were being asked to do, what the constraints were, and how they interpreted them in their way.

Indeed, the discussions helped to question the type of relation to a tangible reality that the compensations and their evaluation process are actually trying (or not) to maintain through the production, finding, transformation of indices into standardized datasets, and then how this flexibility with regard to the status of the information used relates to understandings of what a right compensation is.

6.3.6 The good and bad 'students' of the environmental assessments

During my interviews and observations, companies were often referred to as behaving as good or bad students who had, depending on the cases, more or less correctly followed the instructions and guidelines of the EIA and compensation manual.

This type of relation was also visible during visits, when the evaluators of the ANLA were commenting about what the experts of the company had done well and what they should improve. On the other hand, companies were also often requesting advice from the ANLA. This description was reinforced by the fact that the EIA and the application of the Manual of compensation were described as “exercises” (a word that was often used) that the company should do well, and that ANLA’s experts also had to mark during the process of evaluation, therefore putting emphasis on the norms, expectations and judgement criteria that the companies should interiorize in order to become the good student who would obtain a good grade for the test.

While the issues which the plans submitted by the companies were sometimes seen as related to a technical capacity, as expressed in a previous section, it was also considered to be caused either by their reluctance to comply with the norms, by a faked problem of understanding, by the fact that they would hire interns to do cheap studies of bad quality or to try to save money by doing “desk studies” with limited or no fieldwork, or, in the case of compensations, by their behaviour similar to “students who do not apply themselves and who start studying the day before the exam”*, causing the compensations to be considered too late in the planification of the project and with a poor result. This shift in the perception of the attitude of the companies with regard to compensations occurred to an expert who worked on the subject with an NGO as they kept wondering over the years why the compensations didn’t seem to work:

Nosotros partimos del hecho que no lo venían haciendo bien. Esa fue mi pensada muy sinceramente: que si ellos no lo hacían bien era porque no se les decíamos cómo. Ahorita seis años después, concluyo que no, que si no lo hacen bien es porque un estudiante malo no quiere estudiar, porque le da pereza y no quiere invertir plata, y claro porque hay tambien unas autoridades ambientales débiles en seguimiento, sobre todo esa es nuestra mayor debilidad y pues es muy difícil que [la autoridad] esté en cada proyecto cada seis meses viendo si la compensación está mala o esta buena. (TNC2)

Other times, like in the previously mentioned case of the oil company showing off their expertise, the companies seemed to want to demonstrate their good will or to appear as a ‘good student’ which the employees of the ANLA would see favourably. For example, at some point during the meeting described above between people of the ANLA and representative of a mine, the ‘Social’ expert of the ANLA exposed some of the issues that they perceived with the road that the mine would impact, expressing that “these are the kinds of things” that the company should discuss with the local communities, to what the leader of the company answered promptly that compensation measures should also be considered:

Employee of the company 1: Hay además también que ver la oportunidad de una medida de compensación. Y en particular una que pueda ser aplicada durante la operación del pit 5 que es cuando [el pueblo] Coralito se va a ver un poco mas afectado en términos de movilidad. No es solo hacer una evaluación y ya, sino buscar también unas oportunidades para [mejorar las cosas], sobre todo para las afectaciones que son tan generales en la ficha de manejo.

During this speech, it almost seemed that the person was speaking for themselves or their colleagues, while obviously knowing that the people of ANLA were present and listening, as if to show indirectly of their proactive attitude toward the resolution of issues and toward compensations. It showed at the same time how

compensations (even if not of biodiversity in this case) can be used to draw a better picture of the outcomes of a situation in which some impacts are anticipated.

The same apparent precipitation by the people of the company to conjure the compensability of an impact was again observed when the 'Social' evoked its irreversibility:

'Social' of ANLA: Digamos que ellos se lo pueden aguantar pero si necesariamente hay una transformación, si necesariamente hay un impacto que yo creo que no es reversible y qué..

Employee of the company 1 & Employee of the company 2, together: Pero que es compensable!

'Social' of ANLA: Exacto.

But soon after, the 'Social' got a little upset when the issue of compensation was again raised, because they considered that the descriptions of those in the documents of the company were very weak:

'Social' of ANLA: Ustedes mismos lo han dicho, pero la ficha de compensaciones es supremamente genérica. O sea no hay nada, es nada. Porque la verdad uno no encuentra cómo se relaciona a impactos tan concretos como los de las vías como lo de la presión frente a los predios, como los usos y demás, pues porque no lo dice.

This interlocution shows the limits of the establishment of a discussion based on an idea of collaboration between the parties and of the gestures and expressions of goodwill from the part of the company toward the experts of the ANLA, and to a change of attitude by the 'Social' from an equilibrated discussion toward a franker recrimination.

6.3.7 Conclusion

Among the different discussions about interpretations occurring between the ANLA and other actors, those happening in the offices appeared to focus mostly on either the interpretation of the norm or the understanding of the meaning and consequences of aggregated or intensely transformed (i.e. that had been produced through several transformations) data¹⁶⁵. But contrast, when happening in the field, those discussions were more about the initial production of the data itself with regard to the methods of interpretation of the basic indices which served to produce it, or how it could be "correctly" further transformed so to be able to put it in relation with other types of data and evaluations. Those differences between discussion in the offices and in the field are not exclusive, but they nonetheless show a variation in the approach of the nature of the knowledge and the operations of interpretation involved in the different contexts.

During the meetings, the representatives of companies and their consultants expressed the difficulties that they were facing in terms of complexity, confusion, doubts, of having the feeling to be in an impasse and the need to find way a way out, of not seeing how to do certain actions or emit some critics toward what was requested from them or considered that some procedures or guidelines should be different. In other moments, they were also articulating the constraints of what was requested from them with the constraints of their project, often including problems of temporality.

¹⁶⁵ While not considered to be so useful in the context of compensations by one of my interviewees, the discussions taking place during meetings when the companies would present the EIA of the project for which they were requesting a licence were generally considered as potentially useful, in particular due to the complexity of the EIAs: "De pronto en un EIA pues como es tan complejo, de pronto sí amerita que... y el tiempo digamos que no es, podría ser más largo, yo no sé si sea corto pero podría ser más largo, entonces los evaluadores sí, yo creo que sí les sirve que venga la empresa y les expliquen "ustedes van a encontrar esto, esto, esto, cuando nosotros decimos "esto" nos estamos refiriendo a esto" es más explicativa" (ANLA11).

Interestingly, certain discussions showed an interplay between criteria of certainty and of existence of certain types of data with regard to what was considered necessary in order to take a decision. Indeed, some “informations” may be required even if it is at the expense of their certainty, which may imply that their relation to a present or future tangible reality may remain somewhat undefined. Indeed, as the evaluation process and its defined space of calculation requires data in specific formats at specific stages to advance to the next one, loosening the grip on other properties, and particularly with regard to their epistemology, can be considered satisfactory. Nonetheless, the result is an apparent incoherency in the demands of the institution, rendering difficult to know what is acceptable or not, and causing other actors to be somewhat dubious.

More generally, the exchanges showed how limits between what is considered acceptable and what isn't negotiated among the actors, with varying degrees of strictness and explicitness depending on the subject but also on the type of relation that were established between the different persons and the role they were setting for themselves. Those limits were put into perspective by the valuation of particular elements, impacts, scenarios or alternatives, and the resolution of issues appeared to be processual, that is that the opinions or decisions were at least partly the result of an exchange of descriptions and the agreement on the valuations and the nature of the information to be further produced and analysed so to be put into correspondence with preoccupations.

6.4 Circulation of concepts and normative work

The milieu formed by the environmental authority is one within which actors struggle for maintaining a sort of institutional homogeneity, so to allow it to perform its function of dispositif of management and control. But, as it interacts with in various ways with the rest of the society, whether the producers of norms, the controllers, the companies, the consultants, the preoccupations of its workers, as well as the multiplicity of actors interacting in the areas within which the projects evaluated may or are implemented, the ANLA-dispositif is itself subjected to tensions between the homogenization of the dispositif's responses and the heterogeneity of the situations and modalities of interaction with the milieux and territories that ought to be controlled. Indeed, while a hegemonic control ought to be imposed both hierarchically within the institution and over the other actors, many situations escape the capacities of control by the institution, either because of the understanding of the norms or because of the continuous emergence of situations not expected and the frictions that are necessarily caused by the implementation of policies define them in return.

This can be observed by being attentive to what Chateauraynaud and Debaz (2017) call the “local manufacturing of grip on a dispositif based on direct experience of interactions between heterogeneous milieux”*. Indeed, describing the action of human and non-human actors across milieux, the frictions they produce and the transformations that they may succeed to engender, can help understand the way actors gain knowledge over what overflows the space of calculation and of prediction of the dispositifs, and which may cause (or help them cause) the destabilization their functioning.

Within the institution, the internal challenges were the constant evolution of the legislation and of the guidelines, which makes it difficult to stay up to date, as well as the personnel's turnover, the vast majority being hired on one-year contracts which may or may not be renewed. Indeed, while internal guidelines regarding the interpretation of the norms aim to be circulated and diffused among the institution, that is through

the diverse sectors of evaluation, follow-up and through levels of the hierarchy, the conjunction of constant normative transformations and instability of the ANLA workforce was considered to render the task challenging to the least:

(...) se generó como un protocolo para tratar de dar las líneas mínimas, pero como hay tanto movimiento del personal en la ANLA, pues si tú no estás encima o el líder no está encima o no le interesa el tema, pues como que no actualiza su equipo... Eso implicaba que el protocolo se iba quedando como estancado en aquellos que quisieran divulgar, y aunque se hicieron socializaciones y capacitaciones, pues hubo mucho profesional que no comulgaba con el ejercicio como era de carácter, en medio de todo, voluntario... (ANLA9)

The design of specific compensation procedures and criteria by specialized groups of the ANLA is therefore far from being enough to make those procedures applied uniformly through and through the institution. Their diffusion depends on the stability of the personnel, the diligence of the manager and their interest in the theme, as well as the goodwill of people to actually learn and apply it (and probably also their availability).

Those committed to the maintaining of the dispositif are thus obliged to continuously be attentive to the variety of interpretations of the norms but also to diffuse the ones favoured by the hierarchy through a constant normative work in the form of formal trainings as well as informal discussions. For example, I've been able to observe that the managers of the compensation group were not only consulted by the technicians of the group in case they had a problem, but that they were also using any moments of meetings as well as informal discussions to give feedback and to proactively give details and explain difficulties and subtleties of certain concepts or processes in a very pedagogical way.

These informal discussions, which served to establish the public setting of the norms of interpretation of the rules and of the ways of performing an analysis, seemed to be crucial within the institution in order to reinforce the shared understanding, meanings and implications so to form a community of practice with its own culture, including the understanding of the background and the practices of analysis. From an ethnomethodological point of view, the normative work within the institution consists in the ongoing organization and achievement of the settings which will favour, impede or resist the possibilities for its members to claim and account practical activities as being, among other qualities, efficient, rational, consistent or well justified. In this context, the actors have to deploy methods, from the most formal teaching to more subtle modes of evocations, tales or jokes, for making evident the connections demonstrating the rational connections demonstrating that specific claims can possibly be qualified as consistent or coherent (Garfinkel 1967).

The ethnography of ordinary activities is thus particularly useful to allow the description of the situations and interactions which participate in the ongoing achievement of the rational properties of actions, and therefore of their "correct" alignment with specific goals. Indeed, all the exchanges between actors are the occasion to discuss, explain or render how things are or should self-evidently be. This normative work, which is done by expressing the expectations related to a dispositif and its modalities of functioning, co-constructs the end-means relationships in a way that hope to allow the dispositif to fulfil its purpose.

Through the description of discussions and meetings, this chapter will therefore analyse the difficulties caused to some actors, inside and outside the institution, by some concepts and procedures relation to the design, implementation, evaluation and control of biodiversity offsets, and how are negotiated, discussed and

passed on among actors what the right understandings and practices are considered to be. I focus in particular on the troubles surrendering the demonstration of equivalency between ecosystems and of the no net loss of biodiversity, as well on the types of indicators which should be used to assess the progress of the compensations.

6.4.1 Finding the equivalency

Among the concepts that seemed to resist most strongly to their use, because of the variety of ways they can be understood or the discrepancy between what seems to be right and what seems to be feasible, the equivalence, whether ecological, in terms of biodiversity, vegetation cover or else, that should be demonstrated between the impacted area and the compensated area was certainly one of the most troublesome. During my fieldwork as well as in my analysis of the documents produced by the environmental authority and the companies, including their correspondence, I've been able to observe in many occasions some arguments pushing forward one definition over another, attempts of clarification or warnings, as well as confessions of confusion.

A first situation where the concepts can be discussed, exchanged or clarified are the meetings that the companies request to the ANLA. They can happen for many reasons but I've been able to see that numerous companies were keen on coming to talk about compensations, whether to ask generic or particular questions or to present their compensation plan and have some feedback. During one of those, where an oil company came to present their advancements in their compensation problems of equivalence emerged. While it was only a moment in the discussion, I'm making here a description of the meeting that goes beyond what strictly refers to this moment, so that not only the content of the discussion can be understood but also its context, so to allow perceiving how the exchanges unfold as well as the tone of the meeting and the characters that each of the people embodied.

The meeting took place this day in the small meeting room called "guacamayo" ("parrot" in Spanish; all the rooms have the name of birds) and which, like the other ones, have a central table around which people will sit as well as a large screen used for the PowerPoint presentations. The manager of the compensation group wanted to come but had another meeting at the same moment, so I walked to the room along with two other employees belonging to the group. Soon after entering, two people arrived and presented themselves as employees of the company, while a third one said that they were belonging to a large Colombian environmental NGO. The presence of a person exterior to the company (usually from an environmental NGO or consulting firm) is quite frequent at those meetings since they often help the companies in the environmental assessments and the compensation plans. As the meeting was about to begin, a compensation specialist from the ANLA immediately intervened to ask for the reason for the meeting, that they didn't yet know. A person from the company explained that they would like to present the compensation plan that they had designed for their project and the difficulties that they had encountered in the process. They also explained that the plan had already been formally submitted to the ANLA but hadn't yet been approved. As they connected their computer to the screen for the presentation, this showed a desktop wallpaper which was a picture of a beach with some seals in the foreground. One employee of the ANLA then made a joke about it, saying that they didn't know anything yet about the compensation plan but that the premises looked quite decent, while their colleague

added laughingly: “I agree but there are still a few invaders!”*, referencing the recurring issue of invasive species in the areas in which ecological restoration processes are implemented.

The people from the company then started their presentation, presenting the oil exploration block and the associated ecological impacts, and moved on to the compensation plan itself. “The compensation is within the framework of the resolution 1212 of 2012, o no, of the 1517, sorry”*, said an employee from the company trying to explain which compensation law was applying to their project. They then explained one by one all the phases they went through to elaborate the compensation plan, including the preparation and the context, the selection of the areas for the compensation, the ecological characterization of the areas and the definition of the actions to be implemented. They were doing this by switching between the different scales, using maps of the areas and of the project, describing the scenarios and the ecological criteria that they had used.

As they presented the choice criteria for the area that they had planned to use for the compensation, they explained the difficulties that they encountered to find an area “ecologically equivalent” to the one that has been impacted by the project, since no area seemed to have the same characteristics in terms of vegetation cover. An expert of the ANLA then intervened, saying that “it seems that you might not have the right idea of “equivalence”, as you should, because the equivalence you use refers to the vegetation cover instead of the ecosystem”*. Then the person from the NGO responded: “Ahhhh, OK, maybe we weren’t seeing it that clearly”*, and then the three visitors started writing with relief in their notebooks what the ANLA employee had just explained.

This small example among many shows that concepts that are used for the compensation and are supposed to be explained in the guidelines are often not so clearly understood by the actors applying them practically to their own projects, and for a number of different reasons. But it also shows an example of how an act of transmission of the “right knowledge” (which can also be considered to be a conceptualization having performative impact on the ontological lens through which is perceived the milieu) can occur between employees of a governmental institution serving as a relay of the diffusion of those concepts and private organizations who might themselves transmit these views to other actors in their workplace or around the places in which they develop their projects.

The final written analysis by the ANLA of the compensation plan¹⁶⁶ of the mine project, which I visited and which was the object of meetings recounted above, can offer a second example. In it, the ANLA, as an institution but in practice through the ‘biotic’ who actually wrote this part as well as through their hierarchy and then the lawyers who both validated the work of the ‘technician’, considered that the ecosystems and compensation factors had been well defined, including the use of a map at the right scale. But, they found out, there were within the area chosen for the compensation some biomes which were different from the ones impacted, and the company wasn’t providing any justification for it. While it had been suggested during some meetings that this equivalency ‘error’ could be tolerated if the compensation project was good, since the overall project was archived they finally choose to point it out. In a formal response¹⁶⁷, the company claimed that this was a false problem, since “it is clear from the methodology proposed by the ministry that the selection of

¹⁶⁶ ANLA, Auto 03370 del 22 de mayo de 2019, “Por el cual se ordena el archivo de la solicitud de Licencia Ambiental iniciada a través del Auto 6753 del 2 de noviembre de 2018 y se toman otras determinaciones”, expediente LAV0060-00-2018.

¹⁶⁷ Document 2019083343-1-000, “Recurso de reposición contra el Auto No. 3370 de 2019”, of the project LAV0060-00-2018, June 18th 2019.

areas corresponds primarily to the principle of ecological equivalence”* and that the maps of biomes should only serve for determining the compensation factors and as an indication for the equivalency. While the company admitted that indeed the biome was different for a share of the compensated area, for them “This does not present substantial differential conditions that imply non-compliance with the ecological equivalence, as it is under similar orographic and climatic parameters since it is located in one of the biomes identified in the intervention area”*. In this case the problem emerged from the difference in the determining criteria of equivalency, and of their precision which would allow for establishing similarity. While biomes are organized in discrete units to which a given area pertains or not, even if their separation in a specific area may sometimes be arbitrary because the ecosystems may not evolve abruptly, the parameters put forward by the company, which are orographic (relating to their mountain qualities) and climatic, are more gradual and could allow a discussion. As we will further see, this way of putting forward units of different qualities strongly relates to the definition of borders and thresholds across different scales. But, in this case, the ANLA responded¹⁶⁸ simply that the Manual considers as a priority the ecological equivalence, and that it is obviously not met since the company plainly admitted that the biome was different to the one impacted, therefore leaving no other choice to the ANLA than rejecting the argument.

The Manual sometimes contains precision in its imprecision. It is for example explained that the compensations must be carried out in “ecologically equivalent areas”, and a footnote then specifies that this means that they “must be of the same type as the ecosystem impacted”*. Ecological equivalence is therefore referred in the note to a “type” of ecosystem, a precision which seems to have generated some confusion not only for companies but also for ANLA staff. The specialists of the compensation group then had to look into the matter and decide on the interpretation which seemed to them to be most in agreement with the ‘spirit’ of the manual and the compensations, and then try to disseminate it within the institution through various mediums, including workshops. During one of those, the instructor tried to clarify the relation between biomes and what is actually the focus of equivalencies:

Instructor: Quiero detenerme un poco, que lo pase como muy rápido, en lo del bioma. Porque cambio a bioma. Antes era un poco complejo, había distritos y ecosistemas, y unimos distritos y ecosistemas para hacer los biomas, eso es el cambio. Y entonces ahora ya hay un mapa de los biomas. Pero la equivalencia es ecosistémica. Qué quiere decir eso? Hay unidades que son bioma. Yo busco donde hacer mi compensación en esa unidad biótica, el bioma. Pero lo que debo hacer es compensar el ecosistema que afecte. O sea, si yo afecte un bosque o un herbazal, debería tener acciones tendientes a generar o a proteger o a recuperar un bosque o un herbazal. No a otras cosas. Pero pues yo tengo que garantizar que el ecosistema sea. Otra cosa, y creo que aquí internamente ya más o menos lo tenemos claro pero externamente aún todavía hay dudas: el hecho de que haya equivalencia ecosistémica no quiere decir que afecte un hectárea de bosque y que, con mí factor de compensaciones de 1:5, entonces tengo que ir a buscar 5 hectáreas de bosque para hacer la compensación allí. [Al contrario], tengo que, en el mismo bioma, buscar 5 hectáreas y al final de mi proyecto de compensación me deben entregar esas 5 hectáreas de bosque. Las 5 hectáreas que encuentro pueden ser 5 hectáreas de potrero, y el proyecto mío puede ser la restauración del potrero de vacas para generar un hermoso bosque. Ese puede ser el proyecto de compensación. Entonces no es bosque a bosque y “si uno no es bosque y es que el otro es bosque

¹⁶⁸ ANLA, Auto 12056 del 21 de diciembre de 2020, “Por el cual se resuelve un recurso de reposición interpuesto contra el Auto 3370 del 22 de mayo de 2019”, expediente LAV0060-00-2018.

entonces no pasa”, no. De hecho si hacen bosque a pasto restaurado a bosque son maravillosos, mucho mejor. (...) Es claro? Porque es importante y hay algunas confusiones a veces con esto.

After coming back on the confusion that exists not only due to the definition of the object of the equivalency but also on the changes of methodology and of documents of reference, the instructor then describes what is looked for by explaining the reasoning from the subjective point of an evaluator. To clarify the concept, they therefore describe what should be understood, looked for, considered, as well as what isn't and what is not signified. Indeed, a common “misunderstanding” seems to be really counterproductive and impede both the companies to design meaningful projects and the employees of the institution to validate proposals which appear to be based on a ‘wrong’ demonstration of the equivalency (that is wrong when interpreting it in a restricted way). The instructor explains that, on the contrary, what seems to be wrong is not only right but often even better for the compensations, showing a problem of articulation of various modalities of assessing what is right through common sense, intuition and interpretation of ‘what is done’, ‘what seems to make sense’ and ‘what the norm appears to be dictating’.

Interestingly, the instructor also specified at some point that they have the feeling that the meaning of the equivalency is somewhat well understood within the institution, but that other actors seem to still be unsure about it. This shows that putting a norm in place does not imply that it will immediately be applied and even less ‘correctly’ applied, but that it is an ongoing task to make sure that all the actors, who have different positions with regard to the norm, different practices and different ways to adjust to what they understand it implies, do actually apply it in ways coherent with the view aiming for a hegemony which is never fully achieved.

During a meeting between various persons of the compensation group, which was about the compensation plan of a large company, one participant recounted, at the moment when the approval of the way the company was presenting the equivalency, that they had recently encountered a similar situation in which the plan had been rejected despite being better. This is what I transcribed of their speech in my notes:

At 8 in the morning, we were saying 'no' to one person because they did not do a good characterization of their area (...) and then another person who did not even do a biotic characterization of the area could suddenly be told 'yes'? So I think that the pronouncement on this project should be consistent with the decision that was taken. We cannot say 'no' to everyone else and say 'yes' to this big company. This worries me, the variability of the criteria.*

Therefore the issue (for some people oriented toward these goals) is not only to do a normative work aiming at the mutual understanding of companies and the ANLA, or between the different employees of the ANLA, but also to ensure that the same person will be consistent over time and across projects.

Finally, while it was not the focus of my fieldwork, it can also be put forward the fact that the ways local communities or actors may perceive on one hand what should be considered equivalent and, on the other, what the meaning of the normative definition of an equivalency is, would likely offer another set of variations, and those would be much more difficult for a dispositif to impose its hegemonic definitions and interpretations, leading to the generation of misunderstandings and controversies.

6.4.2 The troubled scientificity of the 'no net loss of biodiversity'

During the interviews that I made with compensation specialists, I asked on numerous occasions how they were seeing the concept of 'no net loss of biodiversity', and the role that they considered that it had in the Manual. One of the authors of the methodology for the Colombian biodiversity offsets first told me that it was largely based on concepts from the science of ecology. Nonetheless, they said, the choices that they have had to make, so to make it useable by a wide variety of actors, including the companies who are the main users, as well as so to be consistent with other constraints, rendered the final guidelines as only vaguely scientific and mostly a compromise. Indeed, even if it is stated that it will help achieve a "no net loss" of biodiversity, they considered that it was more than anything a compromise between distinct sets of actors with different perspectives and priorities:

Obviamente la academia decía: "no, eso es demasiado simple, ustedes están sobresimplificando el tema científico, que porque esos factores...". Entonces dijimos: "pues sí eso está simplificado porque queremos que los criterios del manual sean simples, que todo el mundo los entienda". (...) Pero en teoría una empresa tiene que demostrar que las áreas en donde compensaron realmente no hay pérdida, allí hay unos criterios muy fáciles: el número de especies, el área... Hay unos criterios mínimos, que dicen: "bueno, por lo menos, si es un ecosistema similar o equivalente, o no lo es". No es muy sofisticado tampoco. (...) Porque nadie entiende la no pérdida neta, ¿no? Y tú le preguntas a alguien: "bueno, y ¿que es la no pérdida neta?", y no, ahí no hay cómo medir eso, eso nadie lo ha medido. (TNC3)

But the scientificity of the method, implied by the vocabulary used in the text of the Manual but relativized by one of the authors during an interview that I conducted with them, is on the contrary what an employee of the administration responsible for the environmental licensing at the national level, and who is specialized in compensations among this administration, is relying on. Indeed, this employee explained to their colleagues, during an internal workshop on how to evaluate the compensation plans that the companies are submitting, that they were not there to evaluate whether the plan would lead to a true 'no net loss' of biodiversity or not. Their job was actually to make sure the official guidelines of the Ministry of the Environment were followed, and because those guidelines were saying that if you follow them you will achieve a no net loss then they just had to trust it (or accept it as it is):

Instructor: Digamos que el cálculo matemático... Eso si yo la verdad nunca... Es decir: el ministerio duró bastante tiempo haciendo esto y el ministerio garantiza mediante su manual que si hacemos esas medidas que ellos proponen en los biomas que ellos definieron no va a haber pérdida neta de biodiversidad. Por tanto nosotros en la ANLA en las evaluaciones en realidad no nos podemos hacer una ciencia avanzada mirando a ver si en realidad la biodiversidad que si... Eso digamos que no lo estamos haciendo porque estamos asumiendo que la metodología que estableció el ministerio garantiza eso.

There is therefore a kind of justification for the absence of a net loss outsourced by each of the actors and transferred elsewhere. But even if ecological scientists criticize the method, almost all the people I talked to admitted that the idea of 'no net loss' was a kind of myth. Most of them were considering that its only value was therefore a matter of principle and that everyone knew that the problem with its demonstrability isn't that it's complicated or even impossible, but that it just doesn't make much sense. I've therefore heard on numerous occasions during meetings jokes about what could be the meaning (and the lack thereof) of a no net loss of

biodiversity in particular cases. Finally, as much as the concept of biodiversity in most of its uses, the ‘no net loss’ seemed to be a tinkering which contribution was more based on its heuristic value and the relationships it creates between previously unlinked entities than on its faithfulness to scientific criteria.

The logical fallacy of this demonstration loop of scientificity of the no net loss of biodiversity proclaimed by the Manual can be put in parallel with the objectivity of the assessments of the offset plans proclaimed by the ANLA and which is found in the desire to annihilate all subjectivity and all particularity of the environments in favour of a purely axiomatic and conventional casuistry. On the other hand, for the actors I’ve interviewed, the reduction of subjectivities relate in large parts to a reduction of uncertainties (whether in relation to biodiversity, or in relation to companies and the environmental authority and its employees for themselves) and they therefore depend from one another. Nonetheless, this reduction of uncertainties is thus made by using an axiology which only holds because of its disconnection to other ways of proving its tangibility.

The idea is more that of a transformation of practices than of a chimerical grail. However, the absence of net loss remains affirmed in the manual, in official documents, in compensation plans and especially in communications from both public institutions and businesses, which do not hesitate to proclaim its veracity loud and clear. Beyond the controversy over the compensability of impacts, it is therefore much more to focus on the ontological and political consequences of the proclamation of its potential existence or effective reach, and being attentive of their evolution.

The demonstration of the ‘no net loss of biodiversity’ also largely relies on the demonstration of ‘additionality’, another concept which is simple in theory but which turns out to be much more complex in practice. This is therefore demanded to companies, according to axioms and conventions that all actors have agreed to consider valid, regardless of their scientificity.

Despite the fact that the concepts of NNL and of ‘additionality’ are defined in the Manual, numerous misunderstandings subsist in the exchanges between the ANLA and companies over those. In the example of the mine project that I’ve visited, the ANLA considered that the company didn’t say in their compensation plan how they would generate the NNL nor showed the ‘additionality’ of their compensation actions. Responding to this, the lawyers of the company found necessary to quote the definition given by the Manual of ‘additionality’, so to show not only that they knew it but also to remind it to the ANLA, so that they would be on the same page. According to them, the compensation plan that was submitted showed that:

La selección de los sitios de intervención y de las estrategias a implementar se fundamentan a partir del fortalecimiento del sistema de conexión ecológica en el área, por lo cual, desde allí ya se está generando y preservado el principio de ADICIONALIDAD Y NO PÉRDIDA NETA DE BIODIVERSIDAD. Pues se está potenciado la conectividad de la zona, garantizado no solo la movilidad de las especies seleccionadas para el análisis sino también, diversificando los nichos ecológicos que podrían ser ocupados por diferentes especies de fauna y flora¹⁶⁹.

This exchange shows that the problem with those concepts is that, even if different actors may agree on what they mean in general, the way with which they can or should be demonstrated produces new objects over which it may be possible to have arguments. Indeed, another confusion emerged during the internal workshop

¹⁶⁹ Document 2019083343-1-000, “Recurso de reposición contra el Auto No. 3370 de 2019”, of the project LAV0060-00-2018, June 18th 2019.

on compensations of the ANLA, during which a technician said to the instructor that they were dubious about the fact that conservation and restoration activities were considered equally in the Manual, while they considered that it had very different implications for evaluating the additionality:

Question: Si [las empresas] escogen restauración o conservación el esfuerzo es bien diferente, sobre todo el esfuerzo económico para no decirlo de otra forma. Este esfuerzo debería ser proporcional al impacto, porque si dos empresas tumbas 5 hectáreas y dicen que van a compensar quince, es bien diferente si una dice que va a preservar y la otra a restaurar. Y la idea es de recuperar el impacto. Y lo que usted dice, conservación es bien complicado para decir que yo logre a compensar este impacto residual que no había podido evitar. Cual va a ser el parámetro?

Instructor: Digamos que este seguramente es debatible, y deben haber muchas posiciones al respeto. Una de las cosas por las cuales el ministerio dice que le motivo a generar una metodología en 2012, es precisamente para que las subjetividades se disminuyen. Luego puede que, como en este caso usted considera que se debería evaluar el esfuerzo. Pero el esfuerzo no es evaluado. Puede que todos estemos de acuerdo con lo que dice, pero el esfuerzo no es evaluado. La metodología dice que no, y el ministerio implemento la metodología, el ministerio como rector de la política nacional ambiental se reúno millones de horas supongo yo, horas profesionales, a sacar este Manual, y podemos estar de acuerdo con el resultado, podemos no estar de acuerdo, pero esto es el manual que debemos seguir. Y el ministerio asume como país que me valga mucho el esfuerzo o me valga poquito, me valga mucho en plata o me valga poquito, si yo sigo los criterios que están establecido en este Manual compense la afectación. Entonces puede que tenga razón pero...

While the instructor considers that there may be arguments to support the idea that conservation and restoration are indeed different, and that distinct parameters should potentially be taken into account, in particular in relation to the “effort” put into the compensation, they nonetheless refer to the methodology of the Manual and the fact that, while being the product of millions of hours of work, it doesn’t take into account the “effort”. While they seem to agree with the person who asked the question, they conclude that finally in this case being right or wrong regarding what should be done doesn’t matter, since the Manual doesn’t make any reference to the effort nor to the money put into the compensation. In this case the reference point that has to be circulated is again not the experience of the experts nor the conventions they may establish between them but only the axiological precepts.

Another dissection of the practical aspects involved in the demonstration of additionality took place during a discussion during a meeting which happened near the end of my fieldwork, and which was quite different from those that I had been able to observe during the previous months. This time, a consulting firm in ecology, which was often contracted by companies to elaborate their compensation plans, had requested a meeting with people from the compensation group of the ANLA not to discuss a specific project but to have the opportunity to ask them questions with the hope to resolve the numerous doubts that the formulation of the Manual and its conceptual basis had generated, and which were troubling their professional activity. Four people of the consulting firm attended, of various ages and degrees of experience, and were received by three specialists of the compensation group.

Aiming at answering the question about additionality, one expert of the ANLA started by saying that the Manual was containing a small paragraph saying what additionality was for the Ministry, and that it was therefore the “order of ideas” that they had. But the people from the consultancy wanted to know more

precisely the “kind of additionality” that they were looking for, and how to integrate the question of the stressors over the ecosystem, the work with local communities, the use of indicators, and finally all the different methods and tips to reach or demonstrate it (elements which can be identical or not). Since the consultants took the example of the compensation of a road project, and how to demonstrate the additionality through a compensation done in just a few years, which in the case of a restoration project would only allow to do the initial phases, one expert of the ANLA wanted to make clear that what mattered to them was not only the actions that would be done during this time, but also what had been planned in order to make sure that the compensation would be preserved over the long term:

Employee of the ANLA 1: El importante es de lograr las metas que se han definido, los objetivos. Pero si hay como un problema medio interno es que las vías están afectando mucho mas de áreas, y compensan en tres anos. Así que afectan un bosque totalmente y lo devuelven como medio medio... (...) Allí en estos proyectos nosotros lo que hacemos es mirar mucho el numeral [del Manual] que es el plan a largo plazo. Que no nos pongan un plan maravilloso y que digan: "si pero nosotros solo llegamos hasta el año dos, y después pues que dios les bendiga". O sea, debe haber como un arreglo con una corporación [regional], o otros, pero que nos haga ver que este plan maravilloso que se propuso alguien va a cuidarlo después de ustedes.

Consultant 2: Pero ya hemos contactado corporaciones y dicen que recuperar estos tipos de predios en etapa sucesional no les interesa, o que no quieren más área. Y después las comunidades también dicen: "desde aquí y que me paguen, yo cuido, después no respondo". Así que entiendo el interés de tener un plan para el largo plazo, pero no veo bien cómo se garantiza la conservación a largo tiempo en estas condiciones.

Consultant 3: Si realmente eso es demasiado complejo, debería ser una política de estado donde todos ponen la plata allá y el estado decide cómo va a hacer.

Employee of the ANLA 1: Yo entiendo, pero en este momento la norma que esta establecida dice que no es así.

In a number of occasions during meetings between people of the ANLA with other actors, it seemed that the discussions were attempts of drawing a difficult articulation between the directives provided by the norm and practical problems encountered by those attempting to apply them. In many cases, the actors who had to implement the compensations considered that what was requested from them was unfair, too complex or even impossible, or that it didn't make sense. In those cases, people of the ANLA often expressed that they were understanding the difficulties that were encountered, or that they could agree with the suggestions made to change the processes or some concepts, but were finally responding that “in this moment the norm that is in place says that it is not like that”, or that “personally I cannot make it to be this way”. Again and again, despite the possible agreements found between the actors, procedures and norms had to be put in the front and designated as the only guides despite all their imperfections.

6.4.3 Sorting out indicators

The problem of finding and using the right types of indicators to verify the effectiveness and efficiency of compensation through has come up over and over again during my fieldwork. For the people of ANLA, the message that they tirelessly tried to get across to consultants, companies and especially to internal assessors, is that the compensation plans must absolutely contain ecological indicators, and not just management indicators. The example used multiple times was to say that, even if the company says that to make the

compensation it will put a fence around the area that will receive the compensation, and that it plans to put three kilometres of fence, an admissible indicator for the compensation plan may not be the number of kilometres of fencing that has actually been put, because it doesn't say anything about the evolution of the state of the biodiversity in the area. As the instructor of the ANLA told their colleagues of the "great efforts we are currently doing with the Humboldt Institute in order to design indicators"*, they also informed them that they weren't yet ready and may still take a while, so that they should continue in their evaluations to be attentive to the type of indicators presented by the companies:

Instructor: Obviamente siempre pidan los indicadores de seguimiento y cumplimiento. Y el indicador no es un indicador de gestión. Tienen que hacer el ejercicio de analizar cuáles son los indicadores de eficiencia, cuáles son los indicadores de eficacia, cuáles son los indicadores de gestión. Ejemplo: indicador de eficiencia en el sistema de tratamiento; indicador de eficacia del interceptor frente al impacto que estoy tratando de mitigar, en este caso con la recuperación de la cuenca; indicador de gestión: número de interceptores realizados por año, eso le interesa a la empresa (...), pero eso no me está dando nada de cuentas del objetivo que persigue la norma, qué cuál es? En este caso sería la recuperación de la cuenca: evitar que todas esas aguas servidas lleguen directamente a la cuenca. Me deben desarrollar un indicador y no puede ser un indicador de gestión cómo 'número de capacitaciones hechas a los beneficiarios', eso es de gestión. O 'número de personas que asistieron a las a los trabajos de capacitación', eso de gestión. (...) Eficacia, eficiencia y gestión: son tres baterías de indicadores distintas y las métricas también son distintas. Yo a usted no lo puedo medir por el número de capacitaciones cuando la actividad está orientada a la recuperación, que en este caso eliminaron el tensionante ambiental sobre el agua de la cuenca hidrográfica o de la subzona o lo que sea, no puede ser el número de capacitaciones. Por favor guarde la coherencia a las actividades de la restauración, no puede ser medida sólo en hectáreas. O sea no miden ni diversidad y ni diversidad beta, no está haciendo nada, solamente me está mostrando gestión. Cuáles son esos indicadores biológicos a lo que le está apuntando la empresa?

A tension, similar to the one caused by the diverging interpretations of the types of indicators to be used, was also found in what was described to me as being the different visions that people of ANLA and those of companies had regarding the objective of the chapter of the EIAs which contained the compensation plan. From the point of view of the employees of the ANLA, the companies considered that the objective of the plan is simply to make a plan and thus fulfil their obligation, while themselves hoped to see how the identified impacts on the biodiversity were going to be compensated with actions whose ecological impact can be demonstrated.

But even at the level of ecological indicators, significant dissensions could be observed between the different actors involved in compensations during workshops organized to design the recommendations that could be given in a future Manual. As I've described previously, the ecologists wanted to have details crucial for them that would rely on measurements expensive and time-consuming to produce; the ANLA personnel wanted to be able to demonstrate an ecological difference between the before and after; the representatives of the companies wanted indicators which would be easy to implement and would allow them to demonstrate that they have fulfilled their obligation; finally, the representatives of the Ministry and regional councils wanted above all to be able to obtain indicators that may be comparable and that can be aggregated, so to obtain an overview of their territory.

Those discussions therefore rendered explicit within the design of indicators the interlinkage between their relation and dependence to concrete material constraints, ecological ontologies and scales of analysis,

implying a number of trade-offs which valuation may not equally be done by the different actors. It also showed the importance for the design of indicators of the goal that the indicators are intended to fulfil, that is the knowledge they ought to generate, and also of the type of system or informational ecology in which they are expected to be integrated, not only to allow their meaningful interpretation but also to allow their association to other types of data, depending on the context in which they intend to use them in more or less aggregated forms.

As explained above, the employees of the ANLA didn't want to only have measures of what was done, but also to evaluate transformations over time.

As we will further see, a problem of temporality was particularly strong regarding the obligation present in the first Manual to maintain the compensation for the "lifespan" (or useful life) of the project, lifespan whose edges were often found to be in fact quite debatable. The edges of the duration of the actions of compensation were actually not that clear in this Manual, even if the principle seemed to be "obvious", and many actors struggled to figure out what should really be taken into account. This changed with the second Manual, which states that companies have to do the compensations until the goal of their plan is reached. Nonetheless, while there are obligations in the Manual from the compensations in terms of area, there aren't any concrete specifications for the reach of the compensation's activities, and the shift therefore didn't allow to avoid further confusion and controversies, as the instructor of the internal workshop of the ANLA explained to their colleagues after coming back on the notion of lifespan of a project:

Instructor: Por primera vez en las reuniones que he tenido, unos me preguntaron en la semana pasada qué es la vida del proyecto. Y es una pregunta en realidad interesante y que nunca yo... La respuesta que se dio en ese momento es lo que hemos venido trabajando, y digamos que tanto para empresas como internamente creíamos que todos estábamos hablando lo mismo pero el debate nos llevó a pensar que no, lo que se vio en esa reunión. La respuesta que hemos venido dando y que estamos dando es: la vida útil de los proyectos es el tiempo por el cual tiene la licencia ambiental. Entonces sí no tiene tiempo determinado, y el titular duró 30 años, puede ser que proyecto compensatorio en el 1517 [NB: el primer Manual] sea de 30 años. Pero entonces [las empresas] nos explicaban: "no, pero es que el proyecto es de tal actividad y esa dura no más de 15 años, aún cuando es licenciado por 30", [y nosotros les responderíamos:] "Para nosotros usted les saco está licencia a 30 años, y para nosotros su proyecto licenciado dura 30 años y la medida de compensación debe basarse en eso". En la 256 [NB: el segundo Manual] cambiaron eso, fue un poquito más flexible con la empresa y un poquito más lógico en realidad. Pero ahí nos pone un trabajo bien importante a nosotros y es que ahora en la obligación de compensación se cierra cuando los objetivos propuestos de compensación. Es lógico pero entonces tenemos que ser bien claros nosotros en la evaluación sobre cuál es el objetivo de compensación se cumpla. (...) Por eso les decía: piensen "como yo voy a cerrar esto?". Además de pensar en lo que están evaluando, piensen cómo lo van a cerrar. Porque en la 256 nos dicen "usted cierra cuando se cumplan los objetivos, y si de pronto nosotros se nos fueron unos objetivos y unos indicadores medios chimbos en el plan, pues en un año nos van a cerrar eso. Entonces tengamos mucho cuidado con eso, por favor. O quizás no lo cierran nunca, que eso no se sabe si es peor.

Interestingly, the instructor says that they've always assumed that all the actors had the same understanding of what the life of a project was until people from a company asked them, and that they realized that it was not the case and that the notion was actually potentially confusing. The ANLA had crafted a sort of definition, but this was contested by companies for which it didn't make sense since the duration of the licence

didn't necessarily amount to the duration of their activities, which they considered to be a better basis to calculate the duration of the compensations. When the compensations became goal-oriented, without explicitly referring to a mandatory duration, the problem became on one hand to make sure that the indicators were measurable and that they were measures of biodiversity, as the instructor had previously explained, and on the other that the goal wasn't too easy nor impossible to reach (either because of the misconception of the indicators or because of their unattainable ambition). For the instructor, having a company in the administrative impossibility to "close" their obligation wasn't preferable to a compensation plan that would be too easy to get rid of, because the environmental authority would also find itself in an intractable issue.

To avoid this, the instructor also explained that they had thought a lot about what could be a goal of conservation, that is when the compensation is only focusing on maintaining an area in its current state, but that they had been let down by the Ministry in their quest:

Instructor: Los objetivos de conservación, los hemos discutido mucho y la verdad, incluso se le pregunto al Ministerio, y el Ministerio también tampoco tuvo tan claro la respuesta en su momento cuando se hizo la consulta. Los objetivos de conservación son bien difíciles de cuantificar, cuanto en áreas que en tiempo, de temporizar. Es difícil de saber hasta donde yo les digo que... Y por eso yo les digo que hay que tomar en cuenta la adicionalidad. Entonces de allí nos estamos agarrando para definir objetivos de conservación que son temporalidades mas que todo y que son bien complicadas.

In this case, the problem encountered was that, as they were facing a doubt regarding what they should do, the experts in compensation of the ANLA didn't receive the support from the authority which is placed above them and which should settle the dispute so to avoid letting them take decisions which legitimacy may be more easily contested. Therefore, the attempt to request norms from whoever may be in capacity to establish and diffuse them from the point of those demanding them may sometimes not be granted, forcing them to rely on awkward arrangements.

The examples taken here show firstly that the circulation of knowledge regarding the right interpretations does not simply concern an information that should simply be passed on, but also its maintenance as well as a call to be repeated again and again to the vigilance toward certain common pitfalls. Secondly, it can be observed that the intention of circulating knowledge encounters many obstacles, and that it is often not just about transmitting, but to overcome the resistances through argumentation, conviction or impose a certain vision in the form of a correct and hegemonic knowledge. These are therefore an integral and necessary part of the ongoing functioning of the environmental authority as *dispositif*. Finally, the source of legitimacy of the production of norms may be unresponsive, breaking the transmission chain as it may be expected to function, and leaving the intermediaries to have to deal with and circulate knowledge which may be unclear to them.

The discussions on the compensation requirements were also the opportunity for the people of the company to exchange, construct and circulate some knowledge about the interpretation and possibilities of valuation of ecological frontier objects. For example, during the meeting of additional information for the airport extension described above, a person from the ANLA wanted to put forward the necessity to not simply discard 'transformed areas' because they are not 'secondary vegetation', but to take into account the possible ecosystem services they may provide; another insisted that 'isolated trees' do count although they are not ecosystems, and that they may even be formally protected; a person from the company asked whether flower cultures under plastic greenhouses should be considered as part of the urban area or if they had to be

compensated; and another noted a problem with some of the artificial ponds of the area which, according to her understanding, were not providing ecosystem services but industrial services due to the destination of the water. Each of those questions was therefore not simply focused on the definition of the frontier of the significant-in-itself and compensable biodiversity, but negotiating and according the appropriate articulation between properties of commonly biodiversity-related elements either with their origins, their history or the ecology of their relations through different lenses.

Similarly to the debates that took place in this meeting, the ANLA had argued, in another evaluation of the projected impacts of the mine¹⁷⁰ mentioned previously, that the company wasn't properly addressing how they were planning to mitigate and compensate for two types of impacts related to lentic water bodies which they referred to as "Loss and modification of aquatic habitats"* and "Modification in the composition and structure of hydrobiological communities"*. They put a capital letter in the text to show that these were impacts that were explicitly named, codified as well as defined in the official EIA guidelines, therefore showing they were normatively referring to the whole normative repertoire and dispositif that was coming along with their denomination. The company replied¹⁷¹ to this argument that "although these lentic water bodies are artificial and do not represent important habitats for aquatic communities, rescue and relocation activities for fauna associated with the ponds were included in the management sheet, activities which mitigate and compensate for the impact of the modification of these aquatic habitats"*. The problem was that they didn't consider it as a problem primarily relating to aquatic habitats or hydrobiological communities, and had therefore described their proposed actions in the management sheets relating to the defined impacts of 'Alteration of surface water dynamics' and 'Alteration of surface water availability'. After verification, the ANLA finally admitted¹⁷² the argument, although they considered that the proposed actions would only mitigate the impacts, and not compensate them as well as the company had claimed.

These examples show that, as could be expected, what has to be compensated and how it is compensated depend on the qualification of the impacts and how they relate to preexisting evaluation guidelines and methodologies. But, since the materiality taken into account is potentially understood in many overlapping ways, numerous discussions, controversies and arguments relate to the classifications, and therefore both on the main type of indices of "what is" to be taken into account and on the specific point within the chain of transformation through which the selected indices may become organized data and then support a demonstration.

In some cases, the indices looked for do not come the area of study itself but from documents of reference produced by institutions, and in particular from maps. The problem is not only that those maps depend on classifications which may be disputed, but that maps issued by different organizations may not always match. For example, during the meeting with consultants previously described, another question regarded the classification of the ecosystems and the impact it had over the calculation of the compensation factor, and the first example taken concerned what should be considered to be a dry forest, and they would later raise similar questions with regard to "transformed ecosystems", compensation of pasture, the limit between what is

¹⁷⁰ ANLA, Auto 03370 del 22 de mayo de 2019, "Por el cual se ordena el archivo de la solicitud de Licencia Ambiental iniciada a través del Auto 6753 del 2 de noviembre de 2018 y se toman otras determinaciones", expediente LAV0060-00-2018.

¹⁷¹ SATOR, Recurso de reposición contra el Auto No. 3370 de 2019, 18 de junio de 2019, expediente LAV0060-00-2018.

¹⁷² ANLA, Auto 12056 del 21 de diciembre de 2020, "Por el cual se resuelve un recurso de reposición interpuesto contra el Auto 3370 del 22 de mayo de 2019", expediente LAV0060-00-2018.

considered unmaintained pasture and secondary vegetation. With regard to dry forests, the main issue that they were encountering was on one hand the fact that they varied in density, which was therefore sometimes blurring the limits between forests and isolated trees and, on the other hand, that methods of classification and identification were also varying in maps from different sources:

Consultant 3: El problema que tenemos cuando hacemos un proyecto es que muchas veces la información no coincide, y esta pasando que tal mapa por ejemplo de la Corporación dice que es bosque seco pero cuando cruzamos con el sistema del IDEAM dice que no, que estoy en un bosque húmedo tropical, entonces aquí con que veo?

Employee of the ANLA 1: Pues si allí... Pensaría [que hay que usar primero la información de] las corporaciones y después del Ministerio o del Humboldt...

Consultant 3: Ok, pero hay que aclarar. El Humboldt es como información oficial, las corporaciones no tienen información oficial pero si dicen que para ellos es esto...

Employee of the ANLA 1: "Para ellos es"? No...

Consultant 3: Pero en el caso que el mapa de ecosistemas del IDEAM se contradicha con el Humboldt?

Employee of the ANLA 1: Si esta dentro de las áreas identificadas como bosque seco del Humboldt, las identificamos como bosque seco con un factor de diez.

Consultant 4: Pero el mapa del Humboldt es una escala más amplia. Porque el segundo mapa de ecosistemas es como el oficial que tenemos pero uno encuentra como muchas irregularidades...

Employee of the ANLA 1: Pues el mapa de ecosistemas... Puede que dentro de su desarrollo y procedimientos hayan traído errores, como son cálculos... En cambio los polígonos de bosque seco si se hicieron con estudios específicos. En este caso, la verdad para nosotros si el polígono lo dice vamos a pensar que es bosque seco aun si el mapa de ecosistemas se dice que es la información oficial.

Consultant 4: Si, pero el tema es que el Humboldt lo que hizo es de asumir el bosque seco como un área grande que reúne zonas de desierto, de sábanas y de bosques secos, entonces digamos que es bastante extenso su capa de bosque seco, mientras que el mapa de ecosistemas lo limitan un poco mas. Es que uno no sabe como ellos lo limitan... O sea, no se sabe para ellos lo que es un bioma zonal, si es bioma seco, o muy húmedo, uno no tiene el criterio que ellos usaron para definirlo... O sea uno trae el mapa de otros lados y se da cuenta que en estas áreas si hay bosques secos, pero no hay como homologar esa información para darle a ese bioma o esa área biótica un factor de compensación. O sea, podemos asumir que estos parches de bosque seco si les ponemos un factor 10 nos ampliaría mucho nuestra área a compensar, teniendo en cuenta que en verdad las zonas si tienen partes que son de bosque seco pero también grandes extensiones que no solo son bosque sino también lo que les digo, sábanas, arbustales, zonas áridas y digamos mas ecosistemas que solo decir que es un bosque seco. Es bastante confuso el tema.

Employee of the ANLA 1: Es confuso, claro que si.

In this exchange, the people from the ecological consulting firm showed the confusion caused by a plurality of sources of information. On one hand, each may contain mistakes, incoherencies, or even a plurality of methodologies used to describe elements of different types within the same complication of information, and that these sources. On the other, not only they may be of different nature and be the result of more or less lengthy series of transformation, but they can even seem to contradict themselves when they are interpreted by a given actor.

Those having to make their way in the interpretation of indices and data through them have to struggle with various types of problems: firstly, the coincidence and coherence within and between the sources of information, which original purpose may be different than the one for which actors may want to use them in

relation to the compensations; secondly, their hierarchization, and in particular their respective legitimacy for the different actors and with regard to what an authority may homologate; finally, the variety of the levels of details and uncertainties, as well as the assumptions on which they are based, the criteria used and whether those last two are explicit or not. When the sources seem to contradict themselves, actors described the troubles they encountered when they didn't have a clear view about which one should be considered authoritative, as well as when the informations provided by the authoritative one may be contradicted by informations that the consultants may gather by themselves on the field or perceive through the analysis of other sources of information. As shown with the example of the mapping of the dry forests, while 'the map is not the territory', it can be considered that the informations represented by layers of some map may nonetheless be in some cases considered more legitimate than what the experience of the territory may seem to indicate.

To make that the environmental authority could function, even if the norms do not provide a clear direction, informal hierarchies of the sources of information have to be established and possibly diffused inside the institution as well as orally communicated to other actors so that they may have a clearer idea of the criteria used:

Employee of the ANLA 1: Nosotros entre las unidades biogeografías y las unidades bióticas, o sea nosotros estuvimos en un camello grande con esas cosas en el 1517 (NB: el primer Manual), porque era como la memoria técnica del mapa de ecosistemas de origen. Pero ya no existe! Entonces estaba el mapa de unidades biogeográficas que en realidad ya no existe tampoco, había mapas oficiales de unidades ecobiogeográficas de parques naturales, y el IDEAM tenía otra de unidades geobiogeográficas, y no recuerdo pero el Humboldt tenía otra de unidades biogeográficas. Ninguna de los tres coincide con los factores de compensación. Pues desgraciadamente nuestras autoridades oficiales hacen lo que piensan que le queda mas bonito. Y nosotros tenemos que, y aprovechamos la reunión para decirles eso, tenemos que escoger alguno. Lo que estamos escogiendo es la capa de bosque seco tropical del Humboldt.

Consultant 6: Y el mapa de ecosistema del IDEAM?

Employee of the ANLA 1: Si, también el mapa de ecosistema del IDEAM.

In this dialogue, as the hierarchization of sources of information seemed to be foreclosed by the choice of one map over the others, the acceptance of a second one finally reopens the same problems of incoherencies that the pick of one source over another aimed to resolve.

As with many other issues related to compensations, the trouble with the methods of classification came from the fact that, because of the inherent diversity of the biodiversity, too many elements were not easily classified and were considered to be in grey areas between categories. To resolve the deadlock they find themselves in, actors may thus both try to experiment with the rigidity of the classificatory systems as well as to value the ontological, epistemological and axiological qualities of the proposed classifications and, depending on the cases, the anticipated consequences of choosing a classification over another (like the resulting compensation factor for an area).

6.4.4 Conclusion

Other problems raised during meetings on specific compensation plans and which also led to discussing and transmitting the "good practices" concerned the advisability of buying or not the land for compensation, the specific actions they should take and problems of temporality of implementation and the duration of the

obligations. An expert of the compensation group was considering that people complicated their lives too much, while actually “you just have to see what the objective is, because it makes more sense. The changes just have to be seen on the ground”*. They even added that “the director [of ANLA] does not want everything to remain on the desks, they want the differences to be seen”*, revealing once again the tension between the complexity of the instrument and the possibility of its concrete effects.

For the ANLA people, it seemed clear that the difficulties raised during the meeting with the employees of the consultancy did not come from a problem of competence or from what could be interpreted as incompetence, but that, as it had been the case with companies showing their difficulties to advance on some of their project, they were taking the Manual and the compensation too literally, rendering their task almost impossible since they considered that it was practically impossible to really fulfil all the criteria as they are stated (technically but especially conceptually).

Despite their often seemingly intransigent attitude, certain ANLA’s employees nonetheless said in some occasions, whether with companies or consultancies, that they may be “lax” on some criteria, that it is “more open” than it seems. This attitude was particularly exemplified during the meeting with the consultants: answering a first question relative to the role of the landscape as context, the experts said that they were quite open to the way the concept and related analysis were used, and that “here we’re not that closed about this, we evaluate whatever is presented to us”*. The second example was relative to an obligation expressed in the Manual to consult another institution during the design of the compensation plan, and which the consultants found ironically hilarious since it was in contradiction with the authority that the environmental authority was supposed to be. In this case, the experts admitted that they were agreeing that it didn’t make sense, that the Ministry had said they would delete the reference to this obligation but didn’t do it, and that, finally and despite what the law was stating, “the truth is that we do not require you to consult them”*.

When asked during meetings for clarifications over things that seemed unclear, whether in the definitions or the requirements, the experts sometimes seemed to make some sort of confessions, expressing that “in reality” (or that “the truth is”) they may view, request or analyse particular aspects of the projects or the compensation plans in ways that may vary from what seems to be expressed in the guidelines, as it will be further analysed below in the chapter focusing on the varying relations to normativity. They would nonetheless often make sure to clarify that “meetings are just to give orientations, so please don’t write in your compensation plan: ‘in the meeting the ANLA said that...’”*, therefore indicating that the indications given were to remain informal. This type of admission seemed to differentiate the way information was disseminated between the consultancy vs internally.

While great efforts go toward an ongoing normative work, a number of shared opinions were on the contrary considered to have their circulation restricted. For example, during a discussion of people of the compensation group, one person started to evoke a law, which has just passed but wasn’t yet promoted, that would change the way the monetary amount of the ‘compensations of the 1%’ would be calculated. Since this change was about to come into force, the person said that it was better to wait and see, especially since the lawyers of the institution were themselves not quite sure of the implications. There was also a question of retroactivity, but the person considered that, in some cases, “it would be unjust. But it is not about justice, it is about normative obligations, and therefore this type of analysis shouldn’t be commented to the technicians making the evaluation.”* Here also, a problem therefore arises with the interpretation of a norm which has

varying levels of clarity, and the lawyers are the first ones who must orient what it means. On the other hand, norms, particular provisions and the changes that are provoked are varyingly considered as being fair, appropriate or effective, but the circulation of those valuations, although being informally done and shared among some people, is considered to be inappropriate in a formal setting¹⁷³.

As it was shown previously thought the example of the meeting between employees of the ANLA and employees of a mine during the visit, modes of expression range from implicit suggestions and discussion of general cases, to more concrete examples relative to the project as well as explicit recommendations (and reprimands). There were therefore shifts between discussion of the general ‘right’ practices, behaviours and interpretations and more applied examples, which were also the place for producing arguments and arguing about ways to articulate the norm and its general meaning with its implications both for doing the EIA and evaluating it, articulation which is based on an agreement over the adequacy of certain types of information in certain contexts and for specific ends.

The circulations which are the focus of this section were done through constant reinterpretations and recodings of norms, problems and recommendations by the different actors with regards not only to the concrete issues at hand but also to their respective perspectives, ways of experiencing them and practical implications according to their role or profession. This therefore showed that the circulations are not a mere transmission of abstract data and one-size-fits-all interpretation, but that it requires and involves an important work from the actors at each stage and for each of their interlocutors. The functioning of the dispositif is therefore adapted by its agents and operate variations between pedagogical discussions and attempts of more hegemonic impositions. It was therefore not only important to diffuse the different concepts and their definitions, but also to what they imply as practice, that is how they ought to shape the experience of what the actors work with.

6.5 Conclusion

The evaluation process of biodiversity offsets is based on the Environmental Impact Assessment provided by the companies, which combines ontological definitions of “what is” with the specific “actions” that will be undertaken so to describe the “impacts” that ought to be compensated. While they aim at compensating assessed environmental impacts, the construction and evaluation of each side of the balance as well as the relation between them is extremely complex while being also purely axiomatic and only loosely related to their theoretical aim. In effect, their design is based on the imbrication of numerous concepts that originate from the field of ecology and that have been redefined and adjusted to fit the biodiversity offsets’ questionable conceptual framework as well as to allow its practical bureaucratic evaluation and its implementation.

Inside the institution, and while the accuracy is measured in terms of fit with the legally binding obligations, the complexity entailed makes specialist practitioners from the institution fear that their colleagues might forget (and that they therefore have to remind them) that the goal is to have “a nature that is better off,

¹⁷³ In this case, the formal setting I refer to doesn’t necessarily refer to workshops, as they sometimes organise, but also to any situation in which, as part of their respective laboral obligations a meeting is organised between a technician evaluating a specific project and a person of the compensation group who have to support them by helping them to do the analysis as well as to train them by transmitting some expert knowledge.

not just a project that ticks all the boxes”*. Despite that, they also state their job isn't to evaluate whether the compensation plan they are evaluating would lead to a true 'no net loss' of biodiversity or not, but that to make sure the official guidelines of the Ministry of the Environment were followed, and because those guidelines were saying that if you follow them you will achieve a no net loss then they just had to trust it (or accept it as it is). On the other hand, I explained that one of the authors of the methodology for the Colombian biodiversity offsets that I've interviewed told me that although it was largely based on concepts from the science of ecology, the choices that they have had to make so to make it useable by a wide variety of actors, including the companies who are the main users, as well as to be consistent with other constraints, rendered the final guidelines as only vaguely scientific and mostly a compromise.

The evaluation of the impacts as well as the compensation plans requires the translation of fuzzy ecological concepts such as biodiversity and ecosystems into some depoliticized and objectified bureaucratic counterparts which, while keeping the same name, modify the assumptions regarding their nature. This often causes confusion and scepticism, even to the specialists who have to regularly and collectively decode the guidelines and agree on a common exegesis. Even as they can refer to the definitions given by the guidelines documents, their understanding by the other actor is often considered incomplete or wrong from the point of view of the employees of the environmental authority. A continuous work therefore has to be done inside the institution (through formal and informal discussions, workshops and procedural suggestions) as well as with the companies who have the obligation to compensate their impact through letters, meetings, and official evaluations of projects) in order to disseminate and reaffirm the “right” interpretations of the key concepts and methods involved in the development of “accurate” compensations.

While the norms impose itself on all the actors, the imposition of the actual consequences of the norm as well as of the specific interpretations is the function of the environmental authority as a dispositif. Indeed, the authority aim at diffusing its hegemonic interpretations and at making other actors behave according to those interpretations, even if this diffusion is also an internal struggle requiring a constant vigilance. Nonetheless, as the following chapter will show, the rigidity of the norm and the extent of what it actually imposes on the actors is also part of the interpretations that actors do, value and confront themselves to.

CHAPTER 7

Valuations of compensations between normativity, morality and subjectivity

7.1 Introduction

The necessary work oriented toward the circulation of particular interpretations of the concepts, methods and legitimacy of sources of information have its counterpart in the valuation of the norm itself and in the fact that the interpretations regarding what the norm *really* forces to do also have to be elaborated and propagated as homogeneously as possible. The circulations of the interpretations at both levels, that is of the content of the norm and of the normative strength of the norm, are therefore both the object of the normative work. Whether the resulting normative repertoire is effectively used is the test to which the dispositif, in its capacity to dominate the external milieu, is subjected.

For the diversity of actors related to the design or evaluation of the compensations, not only the norms may sometimes be perceived as being too rigid or too vague, but they also offer a degree of freedom which isn't always considered appropriate. Indeed, the various courses of actions envisioned as the result of distinct modes of valuations may be incoherent or incompatible, therefore producing a number of dilemmas. The analysis presented in this chapter therefore start by looking for the places, moments and situations during which the perceptual aspects of the concepts used in compensation are rendered visible, and how they may enter in conflict with what actors may consider preferable. As the questions that guided the fieldwork and the analysis of the material revolved around the emergence of moments of valuation or moral dilemmas, and how and why valuations were pervading into the evaluations of biodiversity compensations, the descriptions stay attentive to the ways through which diverse actors try to find the right distance from the norm and to the processes which aim at putting into coherency knowledge and ethics, by displacement or production of ignorance.

Nonetheless, this valuation of the acceptability of certain propositions or activities with regard to what the norm may allow may differ among actors, depending on their role, but also depending on the individuals and the particular project they are designing or reviewing. The pitfalls that may occur during this process were often referred to as having to do with the undesirable pervasiveness of the subjectivity, which was often pointed

as the cause of the poor judgements of other actors as well as something that should be cautiously watched for in one's own judgements. The second segment of this chapter will thus focus on the ways through which the actors consider that it is appropriate to demonstrate the validity of certain statements, and how they draw by contrast a typology of possible sources of emergence of subjectivity.

7.2 Perceived advantages and drawbacks of normative regulation

During my ethnographic observations as well as during the interviews, employees of the ANLA expressed a variety of ways through which they were establishing a relation between qualities of the compensation norms and preoccupations related to their own activities. In this sense, the perceived advantages and drawbacks of normative regulation that they were expressing could be understood as valuations of the modalities of evaluation that the norms were setting. These valuations were diffused, adjusted or contested among the employees in formal or informal contexts, thus leading to the elaboration and diffusion of moral economies regarding the ways norms should (or shouldn't) be applied. These prescriptions could be either compatible with the possibility for the employees to maintain a certain degree of freedom or conflicting with their obligations, desires or appreciations, leading them to adopt different strategies and coping mechanisms depending on the circumstances.

7.2.1 Norm as a shared constraint

At a given time, the Manual of compensations (as well as the procedures within which it is embedded) both gives new possibilities and opportunities for action and becomes a constraint shared by the actors involved in the compensation process, therefore potentially becoming at the same time a source of emancipation as well as the way to put processes, people and organizations under control. Those opportunities and constraints relate to a Manual which is perceived as coming with its strengths and weaknesses, its advantages and disadvantages, its rigidities and vaguenesses, generating continuous epistemological and axiological tensions. But, for Chateauraynaud and Debaz (2017:505), "the field of public policy is also riddled with conflicts of competences and procedures, in the face of which the analyst endeavours to restore 'politics', i.e. the interplay of actors and the dynamics of taking power"* . Therefore, while being attentive to the interplay between the actors, I will again focus more especially on the way they themselves understand and describe the shifting frontiers of the political as they appear through the distinctions between normativity and subjectivity, between technicality and perception or between what is considered fair or arbitrary.

The diverse qualities of the norm, as well as the implications of its constraints, are experienced differently by the actors, since their relationships to the norm vary depending on their perspectives, whether it is the one of the ANLA as an institution, of employees, of companies or of control agencies, and according to the circumstances. As I will further show below, those characteristics of the norm are therefore not consensual and stable but are reassessed on a continuous basis by the actors as they engage into experiments and deploy ethnomethods for making sense of it.

An analysis of the way environmental licenses are granted could have focused on the legality of the actions of the companies and of the decisions of the environmental authority, which counts with a large group of lawyers in charge of the verification of the conformity of the decisions emitted by their colleagues in the name of the institution. But, despite focusing on the development and implementation of a legal instrument of public policy, my research is not a thesis in law nor a denunciation of the decisions taken. The focus on the procedures of analysis of the compensations that is proposed here is therefore done without trying to analyse or judge whether the decisions taken are actually conform with the legislation and its associated jurisprudence. This will obviously be an incompleteness of this research for the readers who would have liked to find advices on how to better the processes (something that was a demand from some ANLA's employees during my fieldwork). Nonetheless, by putting the purely legal aspect aside, it allows to focus on the activity of the actors confronted with the task of finding an appropriate path between normative limitations and localized modes of valuation which have to fit within wider normative repertoires. Indeed, matching their valuations with those repertoires allow them to justify their actions in an acceptable way with regard to the law but also to their colleagues, to the institutional prescriptions and to the other actors. As such, the critical operations done by the actors in relation to the norm strongly relate to moral issues and dilemmas regarding the ongoing processes and their different goals.

As I encountered that issues with the norms in relation to the licensing of projects by the environmental authority were numerous, and that the analysis of compensations were closely interrelated with other aspects of the analysis of the projects, it made sense to build in this section on examples not strictly limited to the compensation norms.

7.2.2 Shifting perspectives and legal implications

Perceived interests, limitations and issues that the norm may have, as well as the type of grasps that the actors may consider that the norm may help them to make for themselves, depend on the relation that the different actors have with regard to the norm, its design and its application, and what they expect from it or how they expect it to work for them or for the causes they support. For example, one employee of the ANLA that I've interviewed explained how the perspectives on compensations were varying depending on whether they were seen from a scientific point of view, as a conceptual instrument or as something that should be applied in practice:

En la vida real y con [gente del Instituto Humboldt] lo hemos discutido en varias oportunidades y pues ellos no están en el ejercicio en el que uno está en la medida de cortar el árbol al hombre o sea, ese es un ejercicio sumamente prosaico pues, pero hay que hacerlo y ese es el de la verdad. Y es fácil escribir el documento y es fácil decir un factor de compensación y hacer interpretaciones cartográficas y cosas, pero en la vida real, no sé, en serio, para esta autoridad es una meta inalcanzable, por los periodos de, de seguimiento que nosotros tenemos, por los periodos de vigencia de las licencias... (...) No digo que sea malo, porque a mí, o sea, en esencia a mí me gusta mucho el Manual, me parece como... es más fácil poder explicar las cosas si uno tiene como una línea por la cual... o sea, que no sea al parecer de cada profesional. Y yo tengo muchas críticas frente a todas las metodologías que se usan y eso, pero digamos es mejor siempre tener un instrumento como para hacer orden en las cosas, pero pues hay cosas que son muy difíciles de cumplir, y que digamos hay que ponerlos en contexto en serio. (ANLA1)

There are therefore differences of perception of the norm according to the different actors and their institution, and actors themselves perceive a variety of virtues and downsides of the norm once it is in place. But considerations on what the norm means and implies may also differ within the environmental authority itself, depending if they come from the point of view of a lawyer or a technician, for example:

Está la discusión entre el abogado que te dice “es que la norma lo dice”, y un técnico como yo, que te dice: “loco no, sea en términos de biodiversidad eso no va a pasar, que usted sumercé lo tiene que poner en el acto administrativo porque la norma lo dice, es otra cosa, pero eso no es la vida real y cierre la obligación entonces, ciérrela de forma jurídica porque eso no tendrá un cierre biológico exitoso”... [Pero el importante es que] cumple la norma, ¿me entiendes? Eso es la camiseta de fuerza que tenemos los que estamos acá. (ANLA1)

This idea of norm as a straitjacket came up various times during my interviews, especially for noting a problem that the norm is said to have but that the actors cannot bypass or overcome, since the norm imposes itself onto them. Considering the norm as externally imposed was also a way to justify some of the unresolved problems with the compensations that were considered to be unjustly too often attributed to the mismanagement of the ANLA or its employees:

La ANLA es una institución que está poniendo en marcha una política nacional, obviamente por ser una institución responsable, pues hay que evaluar a ver como se está haciendo y qué tienen a su disposición, y lo que pasa es que ellos están amarrados por una camisa de fuerza, y ellos no se pueden salir de lo que la ley dice. Entonces a ellos por ejemplo la ley les dice: “ustedes tienen que hacer estos pasos en estos plazos”, entonces ellos tienen que ajustarse a eso, así esa ley sea absurda. Para mí, el problema no es la ANLA. (ANLA14)

Therefore, attributing specific powers to the norms (including putting forward a specific degree of tightness or looseness), and in the same movement powers to those who are designing or voting them, is also understood as serving as a means to shift the attribution of causalities and thus of responsibility regarding the successes or failures of the compensations. Nonetheless, a number of other persons that I’ve met were considering that, despite all the deficiencies or issues that the compensation Manual and other norms impacting its implementation, the problems (and therefore the solutions) were not mostly lying in the norms themselves. As such, tweaking it in various ways again and again would not resolve the main issues that were emerging when intending to implement meaningful compensations. For example, one interviewee working for an NGO understood them as being linked to the behaviour of companies:

Hay muchos lanzamientos en Colombia: el lanzamiento de la norma de dos páginas, el lanzamiento del Manual... Y todos van, cuando van, no pues que todo es “qué maravilla!”... (...) Pero sabes que? Yo creo que un problema es que los institutos –y me parece que funcionan así para todas las normas, o sea digamos, no sólo en compensaciones– vean que el problema está en la norma o en que la ANLA o el ministerio no ejecutan bien sus funciones. O sea, yo he sentido que le cargan mucho la responsabilidad a que la norma tenga todas las letras, y no están viendo que es un conjunto de actores para que logre pasar algo, que el problema es complejo, ¿no? Resolver la norma es difícil, pero el problema es bastante complejo, más complejo que llenar a la norma de garabatos. Es que yo a veces veía mucho en las mesas de trabajo que cada institución, como cada persona representaba una organización internacional o un instituto, “yo creo que le falta el protocolo de restauración”, y la otra, “yo creo que le falta protocolo de monitoreo”, la otra, “yo creo que hace falta decir cuándo va restauración y cuando va preservación”... Y bueno, pues uno se queda como pensando, y dice “¿será?”. Y yo decía bueno, pero es que a la final es también lo que ellos le pueden decir a la autoridad

ambiental que le vende, porque no le pueden decir que le van a cambiar o a ayudar a cambiar el comportamiento del usuario, muy difícil ¿no? (TNC2)

The alleged scope and ‘reality’ of the norm, as well as the different functions of each actor in relation to it, are also used as arguments for the attribution of responsibility when a deficiency in the implementation of compensation is put forward and that the origin of the fault is discussed. Indeed, many actors do not try to blame the norm for deficiencies but look instead for institutional or individual faults or mistakes.

For example, in the case of compensations which were not getting implemented because the compensation plan submitted by the company hadn’t been approved, since it wasn’t considered appropriate, an ANLA employee complained about the unjust blaming of the environmental authority by local populations, which they considered to be due to the falsehoods spread by the company, along with the misattributions of responsibilities due to an improper understanding of the regulations:

Entonces si va la empresa, la empresa dice que fue ANLA, y la comunidad dice que la empresa no ha podido hacer su plan de compensación, no ha podido ejecutar, porque ANLA no le aprueba ¿sí? Entonces, uno ¿qué ve? Que hay un desconocimiento de la normatividad en los territorios, un desconocimiento de los procesos de ANLA, para lograr llegar a una aprobación de un plan y cuál es el papel realmente de la autoridad en eso, y que la responsabilidad de la obligación es del que ejecutó el proyecto ¿sí? Entonces por eso yo digo que todavía hay muchas situaciones allí qué conciliar, entre la industria y digamos las intenciones o las ideas que tenemos, para lograr que se desarrolle en los territorios las compensaciones. (ANLA12)

For the employee the problem therefore comes from the fact that the company can mislead local populations who are lacking knowledge about both the norms, the processes and the attributions of the environmental authority, so to disguise their own responsibility for the failure to implement the compensations. As they were talking about problems with the effective participation of the local communities, a lawyer of a human rights NGO that I’ve interviewed considered that the problem is that the environmental authority is usually either pushing back the fault on the norm or on the company who didn’t comply, which is therefore exactly what was seemingly done in the preceding quote:

En la ANLA lo que a ti te dicen es "eso no es nuestra competencia" la ANLA siempre se lava las manos y dice "yo solo me dediqué a recibir ese licenciamiento ambiental que lo autorizó el Ministerio de Ambiente, y yo lo que hago es exigir que se cumplan con unas pautas, pero yo no tomé ninguna decisión, los responsables de todo son la empresa". (RiosVivos2)

The argumentative movement is therefore here to contest the way the ANLA is said to attribute the blame of failure to other actors, by on the contrary pointing the responsibilities that the institution has. And indeed, some employees of the institution also considered that they were often too shy in fully leaning on the norm to impose measures to companies. An employee of the ANLA, who had spent a large part of the interview that I did with them critiquing the companies for the bad studies they were providing, and in particular the deficiencies in their evaluation of impacts and proposed measures to manage them, also pointed out the responsibilities of the institution:

Las evaluaciones de impacto les falta mucho y también en las medidas de manejo, porque desafortunadamente (...) no son realmente de acuerdo a la jerarquización e importancia del impacto y atendiendo al impacto. Entonces en eso sí yo creo que todavía falta, y puntualizando y siendo más particular: en las compensaciones, porque aquí todavía nos da mucho miedo pedir compensaciones. (...) Nosotros estábamos tratando de seguir las normas, pero que realmente se aplique ¿sí? Porque es

que a veces nos quedamos cortos (...) en las medidas de manejo para los impactos y particularmente en las compensaciones. (...) No estamos manejando el impacto ni atendiendo el impacto como debe ser (...), porque [las empresas] copian y pegan y ponen las plantillas y así muchas veces se les acepta. (ANLA8)

Going toward a direction similar to the idea expressed above, which is that the norm may not in itself change the behaviour of users, this employee considers that it is above all a problem of its application or, more specifically, a problem relative to its inapplication¹⁷⁴. While the companies may not provide studies that they consider appropriate, those are nonetheless said to be too often accepted, and neither the measures of management nor the compensations that could be imposed are actually imposed. While this is put onto a “fear”, it wasn’t clear what its origin was and who was feeling it, that is whether it was felt by the individuals for themselves (relatively to the risks previously mentioned) or if it was more related to the position of the institution (see the section below on political overflowing). Still, this seemed to be sometimes possible to overcome, as the same employee recounted about compensations that, for once, they tried to impose on a mine project:

Nosotros lo solicitamos en la información adicional, y les dijimos muy concretamente: “para estos impactos ustedes tienen que compensar, porque ustedes van a hacer una intervención y van a cambiar toda una zona, los cuerpos de agua superficiales, una cantidad de quebradas van a cambiar y se va a perder una cantidad de bosques ripario, que es necesario compensar, pero no compensarlo solamente del medio biótico, es una prestación desde los tres componentes” (...) Yo creo que nosotros fuimos los primeros que estábamos pidiéndole ese tipo de compensaciones, a un proyecto minero, porque es que ellos iban a acabar con una cantidad de bosques ripario y una red de drenaje, una cantidad de quebradas, ¡y no pasa nada! Y sin ninguna medida de compensación, y así han pasado proyectos mineros donde no se les exige ¿sí? (ANLA8)

It is difficult here also to know why something that didn’t seem possible before was finally imposed to a company “for the first time”, considering that a change of norm was not the trigger. But it definitely felt like a relief for the employee who had seen too often the impacts of projects accepted without the authority requesting the compensations that the employee would have considered appropriate relatively to the impacts.

On the other hand, employees of the ANLA are also subjected to a strong control from the part of their hierarchy, and they know as well that the review done by the Colombian national institutions of control, on the general activity of the ANLA or regarding its actuation over a specific project, can lead to personal judiciary charges against the employees who may be thought to have breached of their public servant duty of care or who may have carried out an unfair or too subjective evaluation. One of the employees that I started to know quite well confided to me that people of the ANLA were in reality really scared, because the charges could lead them to be personally financially sanctioned, but asked me not to repeat it because it was the kind of thing everyone knew but that shouldn’t be talked about.

In this context, the question of attribution of responsibilities, along with their legal and procedural consequences, makes that actors may often be inclined to a common practice consisting of taking as much as

¹⁷⁴ On the question of the inapplication of the law, which may cover rights, obligations or prohibitions, and that is not necessarily correlated with its inefficiency, see the book *L’inapplication du droit* edited by Romain Le Bœuf and Olivier Le Bot (2020). They admit that the reasons for the inapplication of the law are multiple, possibly relating either to the ignorance of the rule, the inertia of the authorities the cost of application or the inaction of the victims, but their analysis lack a point of view from the sociology of law which would have allowed to understand how this inapplication works in practice.

possible shelter behind the law. Within the ANLA, this was described to me as taking the form of an overzealousness which may either consist in too restrictive or conditional approvals, or to very cautious refusals.

For example, as some people of the compensation group of the ANLA were discussing the content of an internal document with recommendations about the ways to go about the evaluation of compensations, it was clarified that the hierarchy wanted to put emphasis on the necessity to remind the evaluators (also often called technicians of evaluation, which remind their supposed purely mechanical function) that they should restrain their imagination. In particular, they wanted to send the message that, when analysing and imposing modifications or actions to the companies with regard to their proposed compensations, they shouldn't put all the requirements that they may want or that their imagination was allowing, but to stay only focused toward the possibility to ultimately "close the obligation" (i.e. validate the actions undertaken by the company to liberate it from any further legal obligations on this matter).

At another time on the contrary, a manager of the compensation group admitted that they were worried because it appeared that the biologists (or 'biotics') were, in order to protect themselves, very inclined to find that the companies' studies were bad and that all the compensation proposals (in general and in their details) were inadmissible, especially when they had a bit of originality (see for example in the previous chapter the oil company who was complaining about the shyness of the ANLA with regard to their "ambitious" proposals). To change this, because of the administrative bottleneck it was causing, the manager started to request being convinced why the projects were bad or inadmissible, and told them that they should also try to see how to make the plans work instead of simply rejecting them.

Through the implementation of the norm, actors thus value the different risks that may exist, in ways that are absolutely not limited to what the evaluation that they take part of is said to measure, and in particular the risks that the project may pose to the biodiversity, but also the legal (whether individual or for the institution), social, institutional or political risks, but also those relating to their employment or the diversion or failure of the norm.

7.2.3 Saving rigidity

Beside using the norm as a way to protect themselves or the institution, a number of employees of the ANLA also mentioned to me numerous occasions in which they had been glad that the norm provided strict boundaries. In this case the norm was therefore changing from a shield to protect themselves as something coming behind them to support their decisions, shielding the goals of the norm that were valued by the technician (that is in the context in which the axiological spirit and implication of the norm would align with the preoccupations of the employee) from the attempts to corrupt it by other actors.

For one employee of the ANLA, the fact was simply that the authority was a mere operator of the norm, and one which was under scrutiny of control entities, and the limits of the norm could be used as a mediation tool and were giving weight to their arguments in favour of actions they were supporting (or against others they were not agreeing to):

La empresa generalmente plantea la compra [de un predio], para asegurar la permanencia en el tiempo [de las compensaciones], pero el dueño del predio puede que no esté de acuerdo [para vender]. Y si este señor es un actor local, o es un líder de no sé qué, y convence a las personas que tiene al lado

de que este predio [particular] es la mejor opción, porque él es el dueño del predio, esto puede hacer que estos actores presionen a la empresa por la compensación. Y pues ahí toca otra vez llegar a mediar la cosa: “la norma dice que usted debe tratar de que permanezca en el futuro, este señor no me va a asegurar eso”. (...) Estos son como las cosas que generan más conflictos pero que realmente con nosotros como autoridad somos operadores de normas, yo me tengo que devolver y decirle al señor: “venga, mire y fíjese que aquí la resolución 1512 dice que yo puedo hacer esto, que yo puedo, como yo tengo un ente de control, yo solo me puedo mover sobre esto sumercé, o sea, usted lo puede decir pero yo se lo voy a imponer si usted no está de acuerdo yo igual le impongo la norma”. No hay casi una negociación sino que yo lo que hago es explicarles hasta dónde me puedo mover. (ANLA1)

So, not only the norm is a constraint applying to all actors, but it is moreover a constraint which can be reclaimed by some actors in some specific situations, that is that it can be used as a grip in the negotiation with other actors. Interestingly, this answer was given to me by the interviewee, who was the first person from the ANLA that I got to interview, following a question that I asked about the ways the specificities of the compensations were negotiated between the ANLA and the companies. While I aimed at understanding how the specificities were agreed between the actors, the response took as an example a more extreme case in which the company, in this case under the pressure of local people, would not respect the guidelines. The interviewee therefore explained that there wasn't any negotiation but a simple explanation of the limits of acceptability, which they referred to as the explication of “how far I can move myself”, and that is therefore the shared degree of freedom (for both the company and the environmental authority) within the shared constraint that the norm is.

While the rigidity of the norm was said to be above all very useful as a guidance and to be able to reject ‘bad’ or inappropriate projects submitted by the companies behaving as “bad students”, either intentionally or because of a lack of capacity, it was also often mentioned that it was useful to protect the compensations from the pressure of local communities, who have been portrayed to me numerous times as both an obstacle and a threat to biodiversity compensations. But in other cases, the compensation experts of the ANLA seemed to worry that the institution itself may try to corrupt the purpose of the compensations, and the norm should in this case as well be called to the rescue.

For example, during the meeting of the compensation group of the ANLA previously mentioned in which they focused on the Hidroituango emergency, the norm was considered to be potentially useful against the anticipated will of the board of the ANLA with which they were disagreeing. Indeed, since the social and political pressure was strong on the ANLA to respond swiftly and firmly to the emergency, the group was afraid that the board may want to tell the company to use the money of the ‘compensation of the 1%’ of the project that should normally be used for the protection of the river basin, instead of imposing additional compensation measures and sanctions in the form of fines. They thought that the board would consider this faster and that they were scared that the company may use their lawyers to delay the actions. Therefore, considering that they would be asked whether this money could be used, but thinking that it wouldn't be right to divert this money that the company would have had to spend even before the new impacts, they didn't want to be used in this way and gave themselves the task to find “very good arguments” in order to convince them that it couldn't be used for responding these new impacts. Nonetheless, here again they were preoccupied that the complexity of the various laws regulating the ‘compensation of the 1%’ may restrict the strength of their arguments, and that there may be backdoors allowing either the lawyers of the ANLA to find a justification for the use of the funds or those of the company to enter in a lengthy process of contestation.

7.2.4 Frustrating rigidity: difficulties, absurdities and technicisms

There are many aspects of the compensation that the norm and the Manual are regulating, which obviously includes the calculations, among other things, but also the process, timeline and modalities through which they are proposed by the company and dealt with by the ANLA. The extreme codification of the licensing procedure and of the establishment of the compensations allows in theory the institution to reach two different goals: first of all guaranteeing that each file will be treated with equity since a number of “objective” criteria have been set up; and secondly that the technicians who do the evaluation may not bring their own methods and standards of judgement and values but should be able to rely only on what has been foreseen and designed as the important criteria and indicators. Respecting this procedure allows in the first case the institution to protect itself from the appeals of the companies or accusations of partiality, and in the second case the technicians to protect themselves from the complaints of the institution and from legal challenges. But the same employees, who may help maintain the compensations within a certain frame giving them homogeneity and meaning, also occasionally ranted about those same limitations.

As explained previously, the second Manual changed the moment within the licensing process at which the companies have to submit their compensation plan, indicating that it should be submitted along with the rest of the EIA during the initial request made for the licence, while they previously had a delay of up to six months after the obtaining of the licence for submitting it. While this change was made to oblige the companies to better incorporate the compensations in the overall design of the project and not as something that would come afterward, this also leads them to have to present a plan to compensate impacts that they are unsure to generate or even allowed to generate, and to propose compensation activities in specific areas that they have no certainty to be able to rent or acquire or for which they may not find management agreements with the owners, if those can even be found. This therefore leads to the design of highly speculative plans and to an evaluation sometimes perceived as meaningless, leading to frustrations on both sides, as expressed by an employee of the ANLA:

Tenemos tantos rollos a veces para aplicar las normas... Por ejemplo, digamos esto es mi opinión personal o sea, yo no le puedo pedir a una empresa que me dé el plan de compensación con el estudio impacto ambiental, porque efectivamente esa empresa no sabe dónde va a intervenir. Pues ella puede hacer uno general, pero en un teórico académico que en dos años lo va a modificar, entonces es un desgaste administrativo, y yo sí prefiero las cosas de frente, o sea: “su mercé no sabe dónde está? Listo yo lo autorizo”, y ahí nos hacemos un acompañamiento cercano, invitamos a todos los actores, o sea, aquí totalmente transparentes. Pero entonces, no nos digamos mentiras, es lo mejor para trabajar. Y la otra cosa es que nos quedamos en una zona muy gris, porque yo te pido a ti que entregues una información con mucho nivel de detalle, cuando tú realmente no tienes de dónde sacarla. Entonces tú me la entregas, yo te tengo que empezar a hacer seguimiento sobre eso, y tú no me lo vas a cumplir. Entonces caemos en un gasto administrativo de seguimiento que se me va a caer en el momento que tú me digas: “oiga, pero es que ahora sí intervine y esto es lo que realmente generé” ... Todo esto para terminar en nada. (ANLA1)

Some colleagues of this employee argued that it may still be useful that the company starts to include a reflexion about the compensation in their initial project, which would therefore be closer to a modelling of the compensation than an actual plan, with varying levels of assumptions and uncertainties. This therefore

transforms the relation to the nature of the information in a way which made the employee previously quoted say that they would “prefer to face things head on”, contrarily to what happens in this situation.

Within the ANLA, examples of compensation projects that were described to me as being “interesting” were basically never biodiversity offset projects. This was due to the facts that their strict constraints made that few were already implemented and that those that were often isolated patches not always considered meaningful. The norm was perceived as too strict in particular when it was considered that there is a discrepancy between what the Manual imposes and what would make sense ecologically according to the evaluators, who thus clearly become in these situations much closer to valuers. There are also a number of ways through which the application of the Manual was found to be frustrating or even absurd in some occasions. In a first example, an evaluator of the ANLA considers that an area where the compensation should be done according to the Manual was so degraded that it would be better to be able to do the compensation elsewhere:

Tienes que realizar [las compensaciones] con lógica, pero hay otros actores en territorio que yo pienso que generan unas... Para mí es un poco, digamos, complicado. [Por ejemplo] tú tienes una matriz de un cultivo intensivo de palma africana y tienes una plataforma petrolera de 2 hectáreas, entonces tú le presionas a ese señor para que te haga una reforestación de 6 [hectáreas], cuando lo que lo rodea él es una matriz de, no sé, 3000 hectáreas de palma, entonces uno piensa: el actor en territorio que está acabando con la biodiversidad o lo acabó, pues fueron las 3000 hectáreas, y yo a este proyecto lo estoy obligando y llevando al límite para que haga 6 hectáreas de un ecosistema que ya no existe y que categóricamente tendría que ponerse en otro lugar del país, porque la vocación y uso del territorio acá es totalmente diferente. Pero no, yo lo tengo que presionar porque la norma lo dice, entonces uno se dice, o sea, “y cómo asegura él la permanencia en el tiempo de esa medida de compensación?”. Mierda, o sea, eso no es real porque en términos biológicos, eso es una fuga de biodiversidad, no funciona así. Esos parches son absurdos, o sea, el tipo tiene que invertir una cantidad de dinero, enorme, para que ese pedacito más o menos pueda avanzar, pues porque el manejo de plagas alrededor... El señor puede comprar el predio si quiere, y puede seguir dándole y dándole y dándole pero la presión que ejerce una matriz tan grande de cultivos intensivos de agroindustria, pues loco, eso no lo lleva a ningún lado. Pero la norma dice que hay que hacer, ¡oh Dios! esa parte yo no la entiendo, pero la norma dice, entonces bueno, se queda callado uno y trata de... Y el lo único que nosotros podemos hacer es llevar digamos esos ejemplos a ver si algún día, un legislador dice: “oiga esto tiene sentido, es mejor que no hagamos esto”. (ANLA1)

The problem described here therefore relates to the inclusion of the compensation in a territorial context which implies that different dynamics may be at play and that the interacting milieux, whether sociological or ecological, may lead to incongruous juxtapositions which may be thought as nonsensical but that are nonetheless imposed by the guidelines of the Manual of compensations. It shows clearly the sometimes awkward assemblages resulting from the interrelation of the norm and its constraints, the local dynamics of the landscape and the actors, economic and ecological processes, and legislative considerations for change. While all those milieux have their own logic, their interactions and frictions may not allow all the actors to be satisfied with the outcomes.

But frustrations could emerge in relation to numerous parameters of the compensations, and could be even reinforced when employees felt that the blame for the bad compensations would be ultimately attributed to them. This was for example particularly strong with regard to the compensation duration that was imposed

by the first Manual, which stated that compensation activities should last as long as the life span of the project itself, a duration that could be very short in the case of the construction of a road:

Pues tan fácil que es criticar [a los de la ANLA] pero yo tengo en tiempo real es una empresa que me dice: “señora yo le dije a usted que la licencia era por seis meses, y yo no puedo estar más en el territorio, y además es que yo le tengo que entregar esta concesión al señor que la va a operar, o sea, yo también tengo un instrumento jurídico para moverme, es usted la que quiere desconocer eso”. Y entonces es fácil decir: “oiga es que el ANLA cómo hace para que las compensaciones por pérdida de biodiversidad no se vean, se pierden, se atomicen?”. Dígame cómo dentro del marco de la norma lo logro? La no pérdida neta de biodiversidad, dígame... porque es que soy operador de norma, o sea, yo no... Yo no soy el legislador. (ANLA1)

In this example, the frustration is said to come from the contradicting injunctions that the employee has to face, as they are taken between people external to the institution who critiques their decisions as leading to ‘bad’ compensations (which can be valued over many criteria, like in this case the fact that they are dispersed, dispersion which is considered to be ecologically unwise) and the fact that, even if they agree that the compensation is ‘bad’, the norm doesn’t allow them to force a company to do otherwise, and the company may well put this argument forward.

For the employees, more frustration and even incomprehension of the meaning of their action can even occur when the rules that are made to benefit the biodiversity are actually perceived as impeding to implement what is seen as being the best actions in a specific situation. In the following example, an expert from the compensation group of the ANLA describes the meaninglessness that they felt when they had to refuse to a company the protection of a paramo as a way to compensate their impacts, because the Manual would not allow it:

Hay un punto que a mí sí me preocupa, y es como una experiencia que yo tuve, y fue en un proyecto lineal. (...) Afectaron 30 hectáreas y tenían que compensar 150 hectáreas, y resulta que la línea pasaba cerca a un páramo, entonces la propuesta de ellos fue de comprar una finca que era de mucho más, no era sólo 150 era como 300 hectáreas en páramo. Pero resulta que como el Manual dice que [tiene que tener equivalencia a] los ecosistemas afectados, y no era páramos porque el páramo no se podía afectar, entonces no pudimos acceder a las... no pude validarles las 300 hectáreas en un páramo. Y qué es más importante para todos nosotros: el páramo! Si, el páramo tiene la más alta jerarquía en la equivalencia, cómo es que por un tecnicismo yo no puedo valer esa propuesta ¿sí ves?

- ¿Pero el objetivo de las compensaciones no es de proteger las áreas más importantes, pero de compensar los impactos, ¿no? ¿O cómo tú ves esto?

¡Exactamente! Pero no debería ser así tan cerrado ¿sí? Porque es que ahí es un tema ya de criterio de nación. Yo digo “qué es más importante para la nación?”, que te obligue a ti a buscar unas 150 hectáreas de [un ecosistema] que es muy importante, porque tú lo afectaste –es muy importante–, pero que a cambio tú me estés diciendo: “no voy a hacer esto porque mira que tengo facilidad de entregarle a la nación 300 hectáreas de un páramo”? ¿Que es vital para la nación? ¿sí? es un tema... no sé. Yo, ese día, ¿te digo la verdad?, yo firmé el concepto, y yo lo firmé muy aburrido, muy triste. O sea, todavía me duele. (...) Y nos reunimos con el [director técnico] y un grupo, y el técnico dijo –el técnico que evaluó– dijo “no”, y yo le decía “pero” y él decía “el Manual no dice”, así... Yo decía “pero, ¿por qué no hay excepciones?, siempre deben haber como excepciones”. Mira, te puedes encontrar con una situación ¿cierto? entonces claro, tú no haces legislación sobre las excepciones, las excepciones van saliendo en el camino ¿sí? Entonces yo le decía al [director técnico]: “bueno, y qué consecuencias podrían haber de que nosotros sí aprobemos esas trescientas hectáreas en páramo?”. Pero la persona

que hizo el concepto decía “no, yo no voy a cambiar mi decisión, mi decisión está como está en el Manual y no, no podemos cambiar eso”. Y yo: “¡bueno!”. (...) Debería abrirse la posibilidad de que, cuando una empresa pueda llegar a proponer algo que es en la escala de jerarquía más importante, uno pudiera tener la opción, como autoridad, decir si acepta o no acepta, ¿sí? No de que “es que el Manual no dice”, y entonces no lo acepto. ¿Sí me explico? O sea, esa es la rigidez con la que sufro. (ANLA12)

This story, which puts again forward the problematic place that the concept of equivalence has within compensations, is particularly interesting because it shows the intertwinement of a number of considerations of very different natures and relating to different scales, and how the person confronted with this situation try to assess its degree of freedom by prospecting the possibility of alternatives.

For example, the employee refers to the respective position of certain ecosystems in the “hierarchy in the equivalence” (the paramos being at the top). While this hierarchy doesn’t formally exist, it could nonetheless be argued to be the kind of message more or less explicitly conveyed by the Manual and its compensation factors, as well as by the recent laws passed to protect the paramos. Indeed, the paramos have the highest compensation factor and are always portrayed by politicians and institutions as being crucial, in particular for water provisioning, and they have become excluded from any large activities, in particular mining (although there were attempts to make exceptions). This situation is reflected in the employee’s consideration of them being both the “most important” and “vital”, and being such “for the nation”, that is according to national discourses and policies. This also reflects their view as an employee of a national agency which has to implement national policies, therefore considering national priorities and hierarchies. While this may be for them the strongest argument supporting their position, it also puts aside the specificities of the particular paramo they wanted to protect and of its specific socio-ecological context (for example they do not mention any particular threats to it, which would allow to demonstrate the “additionality” or to convey a sense of particular necessity).

The account made by the employee of their experience shows as well the moral troubles they faced when confronted with a situation of a definition of compensation which would generate a conflict between diverse senses of duty, responsibilities and preoccupations. While being a ‘technician’, they express to have felt with regard to the situation a number of emotions, and to be still feeling some of them, including frustration, boredom, sadness, regrets and suffering (to some relative extent). Usually hidden behind their duty to objectivity, the affective relations that develops between the compensation projects and the employees of the environmental authority (whether because they like it or not, or have a capacity to transmit them or not) are not often rendered visible. But this example shows that at least in some situations employees may become emotionally involved, be affected by the way some compensation projects may play out and influence their efforts to influence them.

In the case described, the acuteness of the frustration was accounted for as being due to a missed opportunity originating in a “technicism”. They tried to find arguments in favour of the change they were proposing, but the employee who did the evaluation stated that the Manual would not allow it. They then complained about the absence of exceptions, and finally tried to talk to their superior to see what would be the consequences for approving a ‘positive’ action not contemplated by the law. They finally expressed that the authority “should have the option”, that is the capability, to reject the technical consequences of the law to better stick to what is understood as being its spirit.

Another employee, recounting to me the same episode during an interview, agreed to say that everyone “loved” the project and that attempts were therefore made to see “if normatively it would be possible to approve it”, but that in no way the adherence to the norm should be lost. For them, exceptions to the rule cannot happen, because they would open a slippery slope of exceptionalism, and it was therefore more a matter of acceptance of the consequences of the norm as well as an institutional and personal work and attention toward the elimination of the subjectivity (see below).

Contrarily to this last view, but rejoining the preceding one, a person working for the national association representing companies (the ANDI) told me that the problem was not about designing more laws, but allowing it to be applied by giving it the necessary flexibility:

[Tenemos que] no enfocarnos tanto en este momento a seguir sacando normas y pensando si se compensa, si no se compensa, sino empezar a implementar y a medir y a crear modelos, porque son miles de modelos, son miles de maneras de acercarnos. No es lo mismo hacer una compensación en la Amazonía, que en los Andes colombianos, no es lo mismo hacer compensación con una comunidad étnica en la Guajira, que hacerlo en el centro del país, entonces esa misma compensación pues requerirá por parte del empresariado y por parte de las autoridades también una apertura a la innovación, a la creatividad, porque pues los territorios son muy distintos. (ANDI1)

Loyal to their business perspective, they advocate for letting more innovation and creativity pour into the design of compensations, so that they could adapt to the diversity of the territory instead of having to deal with such a stiff frame. More generally, I heard many examples of either people from the ANLA, from companies, from regional or local institutions or local people who would have preferred to be able to choose a different compensation project than the one they were evaluating, proposing or ‘receiving’. They expressed their desire to avoid some of the numerous “perverse effects” of some dispositions of the norm, or to choose a project they would consider more meaningful, or of higher priority, or more opportune or more timely than the kinds of activities, parameters and localization than the Manual would allow. They were expressing that they could have implemented a project with much higher ecological benefits, or more useful for the people of the area, or that would be more logical in the long term, or that would be more visible or connected with other projects. While all the actors would not have necessarily agreed on what those priorities would have been, the Manual sometimes led to none of them being satisfied, instead of having to engage in a process of finding a consensus (if things go well), or through which one actor imposed its view.

According to my observations and interviews, the sense that some decisions may lack meaning emerged in relation to the norm from different incoherency generators: some aspects of the guidelines may be understood as being too rigid and leading to specific decisions which appear to go against the spirit of the law, may be morally frustrating (which was sometimes referred to in the interviews as the problem of subjectivity), may be evaluated through a technical-ecological reasoning as stupid or as a mistake, or the theory may be considered well drafted but there are too many particular cases not fitting in.

Despite the theoretical impossibility to skirt around the norm and the vigilance of the lawyers verifying the documents issued by the institution, the ANLA, through its employees, finds itself regularly in the frustrating, embarrassing and often intractable situation of having to make up for past errors, including wrong decisions or licences which “shouldn’t” have been issued (normatively speaking and according to people of the institution themselves), but also because of contradictory injunctions, in particular relating to the obligation for a somewhat rigid application of the norm over those past lax or bad decisions. This was particularly true

for two large hydroelectric power plants that had been, according to what is commonly acknowledged even within the institution, authorized due to political pressures (or ‘political will’) despite EIAs with wide deficiencies of information, tremendous impacts and impossible compensations (see Chapter 5).

Those issues also emerged, all proportions kept, about the follow-up of other compensations. In one of the numerous examples that emerged during my fieldwork, two people of the compensation group had been assigned the task to answer the appeal made by a company against a decision of the ANLA. While it is a usual procedure, in this case the company had an obligation relative to an old forest compensation (prior to the biodiversity compensations) and had done reforestation partly with exotic species. This was in line with what their original plan was stating. This plan had been accepted at the time and hadn’t been contested in the subsequent follow-ups made by the environmental authority over the years (the trees were already big), until the last one. Indeed, while the legislation in force at the time wasn’t giving any precision relatively to the species, it had nonetheless become usual to ask for the use of native species. And this had become mandatory since the last review of the activities of the ANLA by the Contraloria, who complained about the decisions of the ANLA and explicitly required exotic species to be rejected. Therefore, according to the reconstructed timeline made by the employees struggling with the case, in the most recent document issued by the authority on this project, one employee decided to ask the company to replace the exotic trees that had been planted on a plot of land of 5 ha already validated by the authority and therefore subtracted from the total of 22 ha forming compensation obligation. As a result, the company was contesting this decision and the people from the ANLA were very annoyed because they knew that the company was right and that it wasn’t possible to force them to intervene on a piece of land that had already been “accepted”. But, after having analysed the arguments of the parties, the precedents, the considerations made and the official list of exotic species, so to finally agree with the company that they didn’t need to replace the 5 ha, they nonetheless wanted to force it to remove the exotic trees planted in the remaining hectares not yet validated, and started to discuss how to formulate the response. Not really talking about the core of the problem, they were much more focusing on the legal form that the response would take. One of the employees said that writing this response was really tiring, especially that they were a biologist and not a forester. Considering the nature of the discussions, I was quite surprised by their remark, as it appeared to me that the analyses made were as far from biological and biotic matters than they were from forest matters, all of those being deeply buried under layers of legal considerations.

7.2.5 Flexibility, blurs and technical justifications

Whether for their own legal protection or to defend the institution by projecting an idea of an egalitarian and objective process, some employees of the ANLA put forward in the discussions that I have had with them that they were merely there to apply the norm in a detached way, purely as ‘technicians’. In this view, not only any fault can be put onto the norm, but the norm should only be applied in the most rational and straightforward way, which is hoped to guarantee that the compensation process stays under control. But, as Crozier and Friedberg expressed in their work *L’Acteur et le Système* (1977), the functioning of social systems never live up to the technocratic promises which describe them as being thoroughly regulated or controlled. This postulate invites to avoid reducing the actors or assemblages, who are composing the system or dispositif and who are making it tangible, to abstract or disembodied functions. Indeed, “they are actors in their own right who, within the often very heavy constraints imposed on them by ‘the system’, have a margin of freedom that they use

strategically in their interactions with others. The persistence of this freedom undoes the most skillful adjustments, making power as a common mediation of divergent strategies the central and ineluctable mechanism of regulation of the whole” (Crozier and Friedberg 1977).

In some cases, finding this freedom was about finding what the Manual was actually not prohibiting. This was rendered evident when an employee who wanted to allow compensation within a specific type of private conservation area because they considered them faster, an important criterion at a time when the overall outcome of compensations remained intangible:

Las Reservas de la Sociedad Civil hasta ahora, todas son muy respetadas. ¿Por qué? Ofrecen resultados rápidos, esa es mi opinión: ¡Rápido! O sea, ¡que se ven! Sí, pues no dejan entrar a que la gente tale de nuevo allá, y tú ves que los árboles empiezan a crecer rápido, que son zonas que están donde la vegetación crece más o menos rápido, que vuelven las aves, que... ¡Todo lo contrario [de las otras]! Y yo digo, yo, que por lo menos [deberíamos intentar]. Entonces el jefe me preguntaba eso y yo le decía “qué nos pide el Manual?”. Entonces el Manual: el Cómo, el Dónde, todas las equivalencias, si eso cumple: para mí sí. O al contrario, muéstrame en qué parte hay una ley que me diga que no lo puedo hacer y no lo hago, pero si no hay una ley que no me diga que no lo puedo hacer, lo puedo hacer: es mi pensamiento. (ANLA12)

On the other hand, when the norm is found to be incoherent, it seemingly forces the employees of the institution to adopt a strategically cautious position. For example, during one meeting of a group of people analysing a project, a discussion started on issues they had with the way the company had made the air quality measurements. As they were wondering how they could impose the company to do further studies, the leader of the group said that the problem was that there was a contradiction in the EIA guidelines, and that they therefore had to carefully examine what could be asked and how they should make their demand, so as to not be unfair nor be taken advantage of.

When the norm was considered too restrictive, people aimed at finding coherency between their ethical preoccupations, their interpretations of the law and what enters in the range of a normatively (formal or informal) acceptable “technical” demonstration. This search for coherency seemed to sometimes require pushing the norms to their limits:

Lo que pasa es que la norma... siempre las normas están hechas sobre un ideal -creo yo- y siempre hay puertas por los lados de las normas, no para salir sino para lograr entrar (...). La metodología de compensaciones, aun cuando hay una metodología, es abierta, no es tan cerrada, o sea, si usted lee el Manual no dice “Paso 1: tome ta, ta, ta, ta, ta, si es mayor de 100, haga esto, si es menor de 100...” Eso no pasa en el Manual, entonces cuando... como no está tan detallado a veces ese 100 usted lo puede subir a 110 o bajarlo a 90, dependiendo la evaluación técnica y el criterio profesional que usted tenga. (ANLA11)

Because the norm stays at a certain level of abstraction, and that methodologies themselves cannot encompass everything, they therefore leave “open doors” through which one can seemingly produce interpretations that may be far out and make them enter cleverly but without force. Their validity ultimately stays up to a “technical evaluation” and a “professional criterion”.

While some actors may try to follow different rationalities for deciding between a number of alternatives within the limits of the possible, a crucial activity also focuses on assessing, testing and reconfiguring what the limits of the possible actually are. Similarly to what is often referred to as “fiscal optimization”, consisting

for an individual or company in reducing their taxes by using all available legal or not prohibited strategies and instruments, actors say that they may try to ‘optimize’ the compensations by focusing on ecological, economic, reputational, legal or social parameters.

Although the norm has some clear limits, and that the rigidity of the norm is sometimes lamented (although it also appears to be convenient at other times), some aspects remain unspecified. As strong as the will to apply the norm with rigidity may be, not only the norm itself has its own contradictions and incoherencies, as already described above, but not every particular aspect and case can be described and provided for. Therefore, in some cases the actors, whether they are employees of the ANLA or of companies or else, have to find other ways to decide the acceptability of certain positions, judgements or interpretations.

For example, during an internal training meeting on compensations of the ANLA, the specialist of the institution was asked a question regarding what should be done in the cases for which the norm doesn’t give clear guidelines and which therefore may be intimidating or troubling because they involve a higher personal risk for the evaluators. The problem was whether some requirements to the company may be acceptable, even if the norm does not back them up:

No, la norma no te lo dice, allí ya entra... Recuerden una cosa, recuerden que nosotros somos evaluadores técnicos. Si no estaríamos aquí sólo 27 abogados. Si vamos a solo a decir lo que la norma... No es que nos vamos a salir de la norma (the audience is laughing), nosotros somos evaluadores técnicos que estamos parados en un piso legal, que para eso son los abogados que están aquí y nos dicen cuál es el piso legal y cuando nos estamos yendo nos dicen: "no señor eso no se puede porque legalmente eso no es así". Pero nuestra evaluación debe ser y nuestros conceptos deben tener un componente técnico importante, que de hecho eso desde el subdirector anterior y aún ahora sigue poco como insistiéndonos en que pongamos un sustento técnico y que no sólo... O sea casi que a veces no se diferencia entre el concepto del abogado y el concepto del técnico porque todo es "y entonces la norma y la resolución 25..." y el concepto del técnico es "y en toda la resolución del 256 pero entonces como la resolución tal dice que no, entonces tatata y entonces el concepto mío es que tal". No, hay que ponerlo un soporte técnico y si tú ves que tienes un soporte para decir que eso "no, me está afectando kilómetros de bosque, usted me tiene que compensar bosque", y lo justificas técnicamente.

Even when the issue to be resolved is somewhat considered by the norm, or that guidelines may exist, the specificity of each project does not allow a perfect process that could be done automatically, automatization which forms a horizon of desire of the evaluation. Every time, specificities and contexts have to be articulated with analytical concepts and normative repertoires, so to develop argumentation to support the proposals (for the company) or the decisions (for the environmental authority), in the form of a “technical justification”.

Beyond the kind of absurdity shown by the preceding quote, regarding what may arise from sticking too closely to the norm and to the technical aspect of the procedure and making arguments that are only based on legal considerations (in their most objective and literal sense, although this is never really achievable), even a focus on the more technical aspect can also make lose sight of the goal of the processes. Indeed, the high degree of technicization and codification of the procedure may also mean that the various actors focus much more on the evaluation criteria and indicators, which splits the procedure, actions and impacts into numerous isolated elements, than on a holistic view of the outcomes. And this is particularly true for compensation activities. During the same workshop mentioned above, the instructor repeated several times to the audience that the criteria should be applied with great care but that the evaluators should try to never lose sight of the

actual objective of the whole operation, which was to obtain an ecological gain. The instructor was therefore fully aware that the complexity of the implementation of the compensations and that the many criteria taken into account was a risk with respect to the ecological results themselves, the results being nothing more than figures and standardized action plans.

While technicization is often referred to in the literature as a form of depoliticization (see for example Evangelia Apostolopoulou and Adams 2015), it could actually be more heuristically fruitful to see it as a form of inter-politicization by reducing the number of possible equivocations and type of arguments. A similar analysis is done by Chateauraynaud and Debaz (2019): “In a functionalist interpretation of the pattern of transformations, one might think that the universe of procedures is merely a declension of the principles and rules laid down by the dominant discourse. This is not the case. The universe of procedural logics does not exclude controversy and conflict at all: on the contrary, it specifies their terms and modalities.”* Nonetheless, for the technicians of the ANLA, the real risks are on one hand the legalization of the arguments and on the other the systematization of the criteria for deciding between alternatives. While technicality is an approach which helps understand and manipulate data relating to the material world, the real risk of depoliticization comes from an objectification resulting in the loss of some of the links that are part of the chains of translation which operate this relation, as well as those linking facts and methodologies with the preoccupations which led to their production. Said differently, the depoliticization works by creating a logical disconnection between the data manipulated and the tangible reality it is supposed to somewhat represent or be linked to, thus hiding its situatedness.

This established relation by the actors and the institution to technicality and legality is also a way to approach the question of what actually resist from the materiality into the bureaucracy, that is the relations established to empirical data. In particular, this may consist in observing the attention and care paid by the employees to the successive operations of transformation of material aspects into data, as well as to the energy put into activities aiming at maintaining the overall meaningfulness of the series of transformation.

7.2.6 The limited extent of the regulatory scope

Two other fundamental facts about the limits of the norm and the limits of legal regulations in general appeared in my observations: their articulation with other implicit or explicit norms and the issue of compliance.

Firstly, the vast social area that is unregulated and over which the norm actually relies for its proper functioning, whether inside or outside the institutions. One example that was given to me is the way companies relate to local communities when they come within a territory to implement a project and its compensations. While they have a number of legal obligations, most of the relation, in terms of intensity, quality, respect and goodwill rely on what was considered to be the “common sense” of social relations, which include the respect for the people who are already present in a territory. Making the analogy with the way one should know how to behave when wanting to visit someone at their house, one of my interviewees described their point of view, with humour but also with a level of despair:

Sentido común, o sea, vas a ir a un territorio, no es tu casa, es casa de otras personas, qué tienes que hacer cuando vas allá? Si tú vas a ir a mi casa ¿qué haces? (...) Cómo te va a decir una ley “Robin, cuando vas a una casa, artículo 1: pregúntale al portero, artículo 2: saluda al dueño, artículo 3: límpiase

los pies para entrar". (...) Pero las empresas no involucran la gente en el tema de las compensaciones, entonces las empresas dicen que sí hacen socialización con las alcaldías y con la corporación. Pero yo no logro entender por qué, si tú vas hoy a cualquier proyecto y le preguntas a una persona del sitio del proyecto: "¿te socializaron? ¿te dijeron qué era el proyecto?". La mayoría de la gente dice "no". ¿Cómo es posible? Si tú estás ahí ahora, y pusiste tu embalse, tu carretera o tu pozo, qué buscarías? Por lo menos tener una buena relación ¿cierto? (...) ¿Y qué es lo mínimo que debe haber en una buena relación? Por lo menos una muy buena transparencia en la información, ¿sí? Yo vengo a hacer esto, vengo a hacer una vía, vengo a hacer un embalse, te voy a causar tales impactos, se van a mitigar los que se pueden mitigar así, se van a prevenir estos, van a ta, ta, ta... Es posible que por mi presencia aquí lleguen prostitutas, lleguen ladrones, llegue malas personas ¿cómo voy a hacer para que eso no pase? Mi plan de manejo debe decir eso, cómo voy a hacer para que eso no pase en lo social, ¿cierto? En el territorio voy a decir "oiga, le voy a tumbar árboles, voy a dañar posiblemente tantas hectáreas de tus cultivos, por tus cultivos te voy a pagar esto ¿estamos de acuerdo?" ¿Sí o no? El tipo te va a decir "no, yo quiero es esto, esto y esto", y si viene una negociación ¡es diferente! (ANLA12)

The imaginary situation described in this excerpt involves not only a relation to the norm but also a relation to an idea of the ethical behaviour that should theoretically adopt companies if they were to act in a socially acceptable way. But the main problem thus becomes the articulation between different forms and levels of normative and moral obligations in a complex normative web. Those have indeed varying degrees of explicitness, which may not be shared by all individuals and groups, and may involve a variety of subjects, expectations as well as distinct obligations of reciprocity. This could be understood as the difficult frictions between moral economies¹⁷⁵, which reveal themselves to each other as they produce conflicts and resistance.

The second limit that the norm was considered to have come from the different ways the norm imposes itself on the actors. The particular pitfall was in this case said to be due to a lack of compliance with the law by some of them. Examples were given of projects that shouldn't have obtained a licence, or of companies which were not respecting their obligations, and on which the environmental authority was, more often than not, barely putting pressure and even less sanctioning. But other important actants may also emerge through the interaction of the milieux, shedding again the light over the type of relations that may be established with the norm and the context within which spaces of calculation of its evaluation and the evaluation of its compliance may be deployed. Therefore, when evaluating a project, and even if this absolutely not a consideration that is part of the procedure, some managers of the environmental authority may put in perspective the consequences of a rejection of a project with the Colombian context, and wonder what may be the outcome beyond their specific institutional attributions, scope and reach. For example, one of them was fearing that in some cases rejecting a project could lead to leave room to illegal actors, with environmental and social consequences much dire than what the rejected project would have had. This was therefore producing conflicting valuations:

Hay otro vacío y es, de los pocos proyectos que se niegan, y por los cuales se dice "no se otorga licencia porque esa zona se debe conservar y proteger, es rara y los impactos son graves", después de que se le niega al dueño del proyecto —el presunto dueño de ese proyecto— la posibilidad de desarrollarlo, queda eso olvidado y vienen los ilegales y ellos sí hacen el desastre. Y al que quería licenciarse le

¹⁷⁵ The term moral economy was crafted by Edward Palmer Thompson in 1963 but a more appropriate definition could be the one proposed by Didier Fassin who propose to consider the moral economy as "la production, la répartition, la circulation et l'utilisation des sentiments moraux, des émotions et des valeurs, des normes et des obligations dans l'espace social" (Fassin 2009).

dijimos: “que no, porque debía proteger”. Entonces esa protección es insulsa, porque no estamos diciendo: “hay que protegerla y mándenme la protección”. No, no la está, y entonces no la tiene. Entonces es un contrasentido a veces eso. (ANLA15)

In this regard, companies who have obtained a licence have to consent to the supervision of their whole project's operations by the ANLA and (in theory) comply with its requirements, but projects that are from the start unlicensed (that is that their operations are fully outside of legality, even if there are in reality many types and degrees of illegality) cannot be controlled by the ANLA and have no requirements at all, since they should not be existing at all. Not only the norms regulating the functions of the environmental authority state that it should only take care of the projects for which the owners have requested a licence, but the regional or judicial authorities who may have the attribution to control these activities are, as I was told, often too scared to intervene, leaving a potential intervention to rely on a specialized police operation.

7.2.7 Moral economies of normative interpretations

For one employee of the ANLA that I've interviewed, activists, employees of companies or employees of the ANLA may share common ethical points of view, regarding the protection of local parks, preoccupations for the deforestation of the Amazon rainforest or impact of the construction of a road, but when the road benefits them, or that they may need to allow cutting trees in their professional activities, their moral changes: “when the development benefits us then the sustainability doesn't matter to us anymore”*. Similarly, local communities were also portrayed as demanding the compensations to be done, while being in fact much less interested in compensations which may benefit the “environment” than compensations which benefit them directly.

Nonetheless, they were considering that this duality of morals should on the contrary be cultivated within the institution. In fact, they indicated that they were seeing the ANLA as a place where people were coming to work to with an environmentalist vision (a claim that would probably be strange to hear for the people who oppose projects locally and consider that the ANLA is sold to the development and the government). They considered, and lamented, that therefore those employees may be inclined to dislike projects which affect the environment in ways which they don't like, despite the loyalty they should have primarily toward governmental policies and the law:

En las entidades estatales se debería eliminar la subjetividad que puede existir, a veces a mí me parece que el proyecto es bueno, a veces me parece que el proyecto es malo. Pero en realidad este es un estado social de derecho, esto no es una dictadura, entonces aquí no es lo que le parezca al estado, aquí es lo que el estado establece dentro de su normatividad legal. (ANLA11)

For this employee, authoritarianism and arbitrary decisions are therefore seen as a greater risk than not being sufficiently protective for the environment. Or, conversely, the protection of the environment should not rely on the individual decision but should be based on well-designed policies that are well understood and applied by the employees of the authority. Thus they see that their own and their colleagues' responsibility, as employees of the State, is not to follow their personal judgement, as they feel that it sometimes happens, but to avoid “subjective” decisions by sticking as much as possible to the norm:

Yo no puedo decir “esta persona hizo eso alguna vez”, eso es una percepción. Pero hay gente... todos tenemos una posición y una opinión, yo tengo una opinión, pero yo trato de siempre irme a lo más

pegado a la norma que pueda, en la medida en que yo lo conozco, irme a la norma tratar de mantener la metodología y la norma que... porque pues para eso me pagan, eso es lo que debo hacer. (...) A mí hay proyectos que me gustan y hay proyectos que no me gustan. Si hay proyectos que no me gustan, pues miro la norma, respiro, duermo y vuelvo a mirar la norma y, si están apegados a la norma, pues se aprueba, no hay nada que hacer. (ANLA11)

This view of their responsibility rejoins what Max Weber described when he considered the relations between bureaucracies and politics, that is that “the true civil servant shouldn’t do politics, precisely because of their vocation: they have to administrate above all in a non-partisan way”* (Weber 1959). Nonetheless, this seems to be only potentially achievable in ideal bureaucracies and when focusing on perfectly rationalizable objects which, as was demonstrated here, is far from being the case of environmental compensations, despite the intense work done to disenchant biodiversity.

Contrarily to the employee quoted above, when I asked a colleague, who was at first putting forward the fact that they were only applying the norm, about the sorts of arrangements that were nonetheless possible to find within the norm, they finally recounted me all the efforts that they were doing to make sure that compensation projects they liked would be approved more swiftly, while leaving the less interesting ones under the pile. In those cases, they were not trying to find freedom within the norm, but to play with the process of evaluation and its organization, in order to give a boost to the project which they favoured:

Realmente eso depende muchísimo de la gente. Por ejemplo este proyecto [de compensación], o sea, yo voy, me lo cuentan: “oiga tan bonito!”, todo el mundo está como muy ganado al ejercicio (NB: le gustan la propuesta), el día que llegue radicado aquí [en la ANLA] yo me voy de primera y [busco] a quien hay que asignarle esta vaina para poderlo sacar rápido, para que la gente empiece a trabajar. Y pues eso afecta la decisión, porque personalmente me pareció muy bonito, y eso pues técnicamente no debería ser así. Pero pues no fuera muy juicioso que haga la fila: “y el que sigue y el que sigue...”, y seguramente yo voy a estar jodiendo aquí: “oiga revisemos este primero para que lo autorizamos, para que el alcalde pueda hacerlo, para que parques nacionales pueda hacerlo, para que la gente salga de la pobreza”. Yo la verdad me la paso en esas. Por ejemplo, los proyectos que son así les voy haciendo lobby en cada esquina, porque falta mucho [de proyectos como esos]. Porque realmente los proyectos donde te dicen “yo le debo 5 hectáreas y voy a sembrar ahí” (NB: es muy pequeño y no le importa), pues “símbrelas!”, lo pongo en la fila para el siguiente. Y yo sé que no debería ser así, no es objetivo, pero mejor [que] estos proyectos [avanzan], y sobre todo en un escenario de construcción de fondo. Pues esto tendría que ser priorizado por definición, pues porque esto es para la gente, o sea, esto no es para nadie más, y pues quien se caló la línea eléctrica fueron ellos. (ANLA1)

As described previously, in their practice employees may find that some projects are ‘nicer’ than others, which motivates them to have them approved and therefore to accelerate the evaluation process. The story recounted here assumes that the project that everyone liked was also corresponding to normative expectations, but the motivation shown lets imagine that the strictness with which some criteria may be evaluated could somewhat vary. The employee admits that their undertaking of the evaluation of a project and the lobbying they do “do affect the decision”, even if “technically it shouldn’t be the case” and that “it is not objective”. But the motivation for doing it is described as rejoining the enthusiasm of the other employees, in line with the fact that the mayor of the town and/or National Parks want this project to move forward, and that ultimately some people may get out of poverty thanks to it. For this employee, their actions are even presented as a way to restore the justice in a situation that would have otherwise been unjust, since it serves the people, and that they

deserve it not only because they are poor but because they are the ones who now live near the project which generated the compensations, and that finally “it *should* be a priority *by definition*”.

But, the risks of slipping away from the strict application of the norm or to influence the autonomy of processes aren't only perceived as relating to individual motivations, and as being also potentially organized at the level of the institution. When asked whether their own ideas or political opinions were influencing their way of handling the analyses of compensation plans, the employee answered:

En mi caso no, pero si lo he visto algunas veces... Me parece que, por ejemplo, en el desarrollo de las compensaciones como no se han ejecutado, como se quisiera, a veces veo que el afán de la entidad – para generalizar, porque no es una persona específica, a veces es la entidad por muchas razones y válidas incluso–, de ejecutar de que no siga[n las compensaciones paradas por las dificultades]... Tratan de “bueno, entonces hagamos eso para ejecutar, hagamos, hagamos, hagamos”, pero pues si no está en la norma, no es “hagamos, hagamos, hagamos”, es: cambiemos la norma, hagamos una política desde el ministerial distinta, no... y ahí sí a partir de esa política implementamos la política, no: “hagamos, hagamos, hagamos” por hacer. Sí hay unos proyectos que son – cómo decirlo? – como “cuestionables”, como que generan controversias, más controversiales, no sé si sea la palabra, pues a veces las diferencias... Allí entramos a diferencias de criterio. Cuando hay una norma no debería haber diferencia de criterio, debería el proyecto ir con la norma. Y esas diferencias de criterio a veces sí se ven bastante en una evaluación de un proyecto: [por ejemplo si] me parece que este proyecto es bueno, y que ayuda al desarrollo de las compensaciones, entonces “hagámoslo”, y a veces no es tan cuidadoso con lo que está establecido en la política y cómo se deben hacer los proyectos y cómo se deben ejecutar. (ANLA11)

In this extract, the employee describes that, facing issues with the implementation of the compensations due to a problematic norm, the ‘institution’ impulsed a voluntarist dynamics consisting in overcoming normative obstacles (whether coming from what the norm forces to do or what it doesn't consider) by extending the “criteria” used to judge whether a project is doable or not. Here, politics are said to be involved both at the levels of the ministry which is at the origin of the norm (even if the members of the Congress are actually those voting it), of the norm and of the way the norm should be applied, even if this goes against some aspects of the norm. Thus, the distinction between values of the employees and values of the institution cannot be resumed as the necessity for the actors to act purely according to one or the other, in Weberian's terms, an “ethic of attitude” or an “ethic of responsibility”, since both actually also coexist in the discourses about the ways to proceed and goals of the institution. Indeed, those can be understood by the actors as being sometimes contradictory, and may therefore have to articulate them with other ontological, ethical or axiological preoccupations so to orient them through the valuation of other grounds for action.

Implementation problems encountered by the institutions are described by the employee to become even more acute at the intersection of normative issues and controversial projects, therefore generating a greater uncertainty of the scope of validity of the normative repertoires. This uncertainty is worsened by their landing into interacting milieux contesting both their hegemony as well as the hegemony of the information they should evaluate. The result is the loss of the ideal of a pure and “careful” normative application and the emergence (or imposition) of alternative “criteria” of evaluation.

Both the institutions (as represented by its critics when they consider the dysfunctions of “the ANLA”) and its employees can sometimes be caught in the tensions between the impossible or wrong application of the norms, and between internal and external pressures to go faster or be more careful, to care about the means or about the results. But soon after, in the interview, the same person recognized that the Manual contains at least

two large “flaws”, one of them being the definition of the equivalence. Indeed, if taken “literally”, they said that what it indicates does not makes practical sense (see for example the section above about the normative work done to stabilize a shared concept of equivalency), and that therefore in this case one shouldn’t stick so much to the norm but actually have to “interpret”:

El Manual tiene dos fallas grandes importantes, y una es la equivalencia ecosistémica. Como está literal el Manual, esta falla obliga a la interpretación. Se le ha expresado al ministerio y que el mismo ministerio lo ha interpretado, debió haberlo corregido [en el segundo Manual], pero no lo ha corregido y es al final la equivalencia ecosistémica literal. (...) Aun cuando trató de corregirlo el ministerio... Yo creo que no lo entendió tan bien el programa del ministerio, porque trató de corregirlo bajándola de ecosistema a bioma, pero sigue hablando de equivalencia ecosistémica, y debió haber hablado quizás de equivalencia de biomas o... (...) Además como está hecho sólo para ecosistemas naturales, siempre la actividad que usted podría hacer es conservación, no hay otra opción. ¿Por qué? Porque afecta a uno y tiene que buscar otro idéntico y tiene que dejarlo como estaba este, pues ya está porque es idéntico. Entonces sólo se puede hacer conservación, entonces de ahí para allá ya es un...

- Así, si estás afectando un ecosistema transformado necesitarías encontrar un ecosistema transformado y conservarlo transformado?

Esa es la peor, y incluso era un tema de consultas reiterado hace un par de años por las empresas, que decían: “Y yo cómo voy a compensar esto, si afecté una hectárea de piñas, qué? Voy y siembro cinco hectáreas de piñas o cómo lo hago?”. Entonces es una cosa de... ahí sí hay que necesariamente llegar a la interpretación. (ANLA11)

The flaw of the Manual regarding the definition of the ecological equivalence thus isn’t presented as coming from an impossibility to find it or from the fact that theoretically it can’t be understood, but from its consequences, which are seen as being absurd, incoherent or ridiculous. Ideally, the person interviewed would have liked to see the norm changed but, as their hopes had vanished when they saw that it hadn’t been the case in the second Manual, the only alternative to make it workable was to “interpret” it so to make it mean something which, although contradictory with what is written, would be coherent with the deeper intention that they feel is conveyed by what is written.

Here the issue, and as will be further explored in the next chapter, is the relation between the design of a generic and highly technical procedure which should apply equally for the whole country and the application to very specific local projects, which therefore relates to matters of scalability of the compensation guidelines, procedures and projects. This generates a tension between generalization and particularization that the employees are said to have to resolve through their technical capacities.

Alternatively, one can also “interpret” that the goal of the compensations, as stated in the Manual, are to give some kind of ecological “benefit” to an area. This benefit has to be technically justified but, regardless of the flexibility of the norm, the problem is that, similarly to the issue with technical justifications, “creativity”, which was considered above as being sometimes too unbridled, could also be employed to find the facts required for the demonstration:

Todos los proyectos van a ser específicos y puntuales, pero una cosa es que yo desarrollo el proyecto con la metodología y me encuentre un parchecito que me está dañando la conectividad ecológica y habría que mirar si esto técnicamente se puede o no, es justificable o no, y otra cosa es que yo simplemente haga todo lo contrario a lo que me está diciendo la metodología, porque para mí el proyecto es bueno. Ahí es donde yo digo que no puede entrar la subjetividad, a que “no, este proyecto a mí me parece que es bueno, entonces no importa que no tenga la metodología, no importa que no

cumpla lo que está estableciendo el ministerio, sino que me parece...” Porque en realidad todos los proyectos son buenos: todos los proyectos, algún beneficio van a traer un proyecto siempre, todo el proyecto desde donde usted lo mire, siempre va a ser de alguna forma. (...) Pero como es una compensación yo estoy buscando es el beneficio, yo no le hago un estudio de impacto ambiental a la compensación, yo lo que debo es justificar el beneficio y para justificar el beneficio hay gente muy creativa, entonces siempre va a encontrar usted un beneficio, siempre. (ANLA11)

Following the reasoning of this employee, it may therefore be deemed acceptable that, when the methodology leads to what is considered to be an issue (in this case because of the negative implications on the ecological connectivity), one looks into the possibilities to technically skirt around it. But, on the other hand, it wouldn't be if the intention was led by “subjective” considerations and that those are put above the commitment to respect the methodology. There thus seems to be little clarity about up to where the technical justifications may be extended, nor about what would justify a judgement which would integrate notions, concepts or modes of valuations not directly specified in the evaluation guidelines found in the norm (theoretically at least, since not all notions can be defined in the norm itself, and its comprehension and interpretation therefore rely on a number of explicit or implicit references and frames put in series).

In the preceding quote, the norm is said not to imply that the compensations should be evaluated according to an absolute benefit, nor that an EIA or an evaluation of the alternative possibilities for the compensations should be made to see which option is the best, but that the Ministry should have made sure that its policies are clear enough so to avoid that the technicians' perspectives may generate variations. Therefore, while the compensations are evaluated through a methodology, the norm itself is valued through the use of a number of referentials by putting it in relation either to ideals of a humble technical practice (by opposition to one with unleashed creativity), to the fact that a comparison to other potential projects isn't part of the equation, or to the fact that the norm allows (or doesn't allow) to put into perspective the projects through subjective valuations.

The criteria of the compensations can therefore be jointly evaluated within their own space of calculation as well as valued through their comparison and putting into relation with a variety of reference points relating to different scales and preoccupations. But when the norm itself has flaws, as described above, the employees find themselves in front of dilemmas which require them to articulate various modes of valuation and hierarchize valuations relating to different referentials, therefore orienting the moral considerations of their actions on the basis of what could be seen as an awkward valuation of the valuations, or meta-valuation.

As we were focusing on the issues that the norm may have, an interviewee started to circulate through and link a number of diverse and previously scattered considerations about: the perceived necessity to change the norm, the ambiguous position of the employees, the attribution and removal of responsibilities of the institutions and of the individuals to generate this change, the alternatives and risks in case it doesn't happen, and the relation between professionalism or subjectivity with legal and technical analyses. In order to allow seeing the way by which they are successively linked, I'm reproducing a longer interview extract:

El Manual es inaplicable si se desarrolla al pie de la letra, porque el Manual con el espíritu y el... sólo permitiría hacer compensaciones en áreas idénticas y si yo tengo un área idéntica a un ecosistema natural, que en teoría es un ecosistema natural y si es un ecosistema natural en teoría yo no lo debería intervenir sino máximo hacer conservación, luego es inaplicable, no tiene sentido lógico no hay forma de aplicarlo, o sea, se niega todo: ahí sí que se niega todo.

-Pero tú eres un técnico de la ANLA, y eres pagado para aplicar la norma...?

Así es, así es.

-¿Y si tienes que negar todo por la norma?

Ese sí es un inconveniente, claro.

-Tampoco es tu problema, o ¿no sé?

No, más o menos. La Contraloría [de la Republica] nos está molestando por eso. Hay mucha subjetividad en general en todas las ramas de todos lados, y la Contraloría... La misión de la ANLA nunca, nunca, es entrar a mirar eso como usted acaba de decir. Para mí también es así, pero la Contraloría los hallazgos que tiene es: "la ANLA no está logrando que se ejecuten las compensaciones". Para mí la respuesta es la que usted acaba de dar: "eso no es problema de la ANLA, a mí no me importa", "es problema del ministerio que define las políticas y si fracasaron, va usted, moleste el ministerio, no me moleste a mí, yo estoy aplicando la norma". Pero no, la Controlaria nos molesta a nosotros. De hecho, yo tuve la oportunidad de responder un hallazgo de la Contraloría alguna vez y la respuesta fue eso: "eso no es problema de nosotros" y la Contraloría contestó: "no señores, es que el estado tiene un principio que es el rigor subsidiario entre entidades estatales, entonces si el ministerio no hace las cosas, usted como entidad parte del ministerio de ambiente que esta involucrada en la temática, usted lo tiene que hacer".

-Alguien tiene que ser responsable, no se puede...

"No se pelotee y no le diga que todo es culpa del ministerio"; para mí, todo debería ser culpa del ministerio. Si entráramos a hacer eso así tan riguroso, todo sería culpa del ministerio y el ministerio sería más serio y más cuidadoso en, por ejemplo, al identificar este tema, esta inaplicabilidad que le digo, corregirla, sacar un adendo, sacar algo, hacer talleres, sacar un memorando para todo el mundo diciendo: "cuando pase esto: tal; cuando los proyectos se vean que tienen una fragmentación o que no sé qué: tal". De hecho el ministerio lo ha tratado de corregir, (...) pero no lo hizo en este caso específico porque, digo, hay muchas particularidades. Entonces ahí entra uno en la interpretación, infortunadamente cuando hay interpretación entra la subjetividad, no hay nada qué hacer. La interpretación así usted sea el técnico más preparado en un tema, la interpretación lo lleva a usted a una subjetividad en menor o mayor grado; lo que hay es que llevar que esa subjetividad sea lo mínimo posible y lo primero que yo le decía a usted, que uno tenga la capacidad, la experiencia y la condición profesional lo mejor desarrollado posible, para que si usted es un profesional personal y profesionalmente bien formado, hay mayor esperanza de que tomen mejores decisiones cuando tiene que entrar a hacer la interpretación.

-Pero una decisión mejor... ¿Mejor para qué?

O sea, las decisiones más acertadas. Puede ser a favor o en contra, no sé, depende del caso, pero si usted es un profesional que tiene conocimiento técnico, que se ha formado, que se ha desarrollado, que tiene experiencias, es posible -no es garantía- pero es posible que en el momento en el que usted llegue a esos huecos que no están definidos básicamente en la norma, usted tenga que interpretar la norma o que aplicar algo que no está tan claro y diga "bueno, profesionalmente mi decisión es esta".

-¿Entonces el más grande que es su conocimiento, el más tiene la garantía de limitar la influencia de la subjetividad?

Yo creo que sí. Porque [el que tiene la experiencia] ya ha recorrido, ya sabe que si lo hizo así hace diez años, lo hizo así la embarró y fue malo, tiene ya la experiencia, tiene el recorrido, tiene el conocimiento, ha leído, entonces sabe que hay bastante teoría que dice que "si usted corta eso, puede que la norma eso y puede que lo más fácil sea...". De hecho, lo más fácil es decir "ah no, pues la norma dice...", pero [el] sabe que toda la literatura dice que entre más continuo más funcional, [entonces si] puede hacer un corredor pues es mucho mejor. Entonces [el] tiene esos soportes para hacerlo, no sólo porque

a [el] le parece. Porque ese es el problema que yo veo realmente, más que de pronto a veces se haga una cosa que no esté literalmente escrita. Porque volvemos a lo mismo: si vamos a hacer cosas que estén literalmente escritas, el seguimiento y la evaluación lo debería hacer la contraloría, no nosotros; contrate a tres abogados y mire el Manual y listo: “esto dice, esto dice, esto dice” y ¡listo, [la decisión] salió! Para [evitar] eso hay una entidad técnica. (ANLA11)

As parts of the Manual are considered “inapplicable”, but that it is their job to apply it, the employees therefore find themselves in front of a dilemma. The ANLA itself, which mission is only to modestly apply the norms, would like it to be either changed or at least to be freed from responsibilities of the consequences. The Contraloria, considering that the ANLA is co-responsible with the ministry, puts it in a difficult situation of finding a middle way between wanting to change a law it can’t change and applying a norm it can’t apply. For the interviewee, a solution could be in the Ministry giving at least some orientations, diffused through a number of actions fostering a normative work. This could in turn serve as a guidance avoiding the necessity to remedy to “interpretations” inevitably leading to “subjective” appreciations of employees cast adrift between evaluations and valuations. Nonetheless, the degree of “subjectivity” is considered to vary depending on the training, the experience and the professionalism of the employees (the “best” decisions being the most “professional”, themselves being the least “subjective”), due to the possibility to refer to theoretical cases, past mistakes and technical expertise adding up to a capacity for ‘professional interpretations’ avoiding both falling into the pitfalls of the norm, personal preferences and arbitrariness. But, similarly to what was previously expressed with regard to the differences between technical and legal argumentation, the inapplicability that was described at the beginning of the interview extract seems at the end, after the faith in the intelligence of technical evaluations was regained, to come down to a legal inapplicability (a legality which refers to things “literally written down”). For the interviewee, the technical interpretation of the norm should therefore not be literal but be close to the norm, and it should be based on the professional experience but not on the subjective one.

Conscious of the difficulties encountered by the different actors who have to work with the Manual, a number of actors within the environmental authority try to give informal advice on how to handle its uncertainties and the feeling that the ground continuously slips away under their feet. This is done by giving tips on how to understand and do the analysis of certain aspects of the compensations, but it is also hoped that the own experience of the ‘technicians’ will help them make the ‘right’ decisions when the space of calculation becomes fuzzy. Beyond their personal experience, people who have to manage to design or to evaluate compensation plans can also rely on publicly accessible information about previous projects. This may come in the form of case studies produced by the association representing the companies (the ANDI, see Chapter 4) or environmental NGOs, or through accessing the archives of the ANLA so to analyse preceding projects to potentially find patterns, logics, benchmarks or points of reference behind the decisions of the environmental authority. But other actors may also intervene to provide guidance. In particular, one employee of the Humboldt Institute explained to me the issues raised by the uncertain interpretations of the Manual and how, from their position which they hope to be perceived as the one of an epistemic authority, they may give a hand to those looking for firmer grounds on which to build less fragile arguments:

Los niveles de interpretación que hay en la norma son... son enormes. Cuando decimos que ellos requieren protocolos para seguir el Manual, el segundo Manual, es porque buena parte del Manual todavía permite la interpretación y la interpretación es lo que más les da miedo a la hora de tomar decisiones, porque sobre eso les puede caer la opinión pública sobre una decisión que puede ser tan

argumentada a favor como argumentada en contra. (...) Lo que queremos hacer desde el instituto Humboldt alrededor del segundo Manual, es seguir proponiendo mecanismos que si no es cierto que objetivan la decisión, que la vuelven super objetiva, al menos le permiten al que toma las decisiones tener un argumento por fuera de sí mismo y por fuera de la norma: “me lo dijo el instituto Humboldt y en ese sentido hay que creerle etcétera etcétera”. Tal vez sí sea utópico pero por lo menos [queremos] limitar el nivel de incertidumbre, no solamente de la información sino del protocolo de la norma, de la interpretación. (Humboldt1)

Externalizing the supporting basis of the arguments relative to valid compensations isn't, from the point of view of this interviewee, to protect the employees of the ANLA, although that may also be a necessary condition, but to help them have stronger arguments to take a stand within a developing controversy. In such a case, deciding consensually between opposing arguments may become impracticable, hence generating fear among the employees of the environmental authority who would become vulnerable to the jungle of subjectivities. This interviewee thus agrees with what is expressed in a previous extract considering the consequences of controversies, that is with the fact that, in regimes of controversy, the norm in its idealized application becomes useless, since a way to find agreement between actors cannot be found by referring only to its internal logic.

As acknowledged here, uncertainties with regard to the implementation of compensations come from the efforts to render the compensation's axiomatic system as autonomous as possible, which allows on one hand to talk about 'no net loss' as a technical ideal, but make it on the other often difficult to relink to practical problems encountered by the different actors. As those practical issues have to be faced, and that the actors look for ways to resolve them, they get confronted with the incompleteness of the compensation's axiomatic system, which obliges them to look outside of it to orient themselves, therefore threatening its autonomy¹⁷⁶. Indeed, the formal system of the compensations has to be articulated with 'real' areas in particular situated places which, despite the highly technical guidelines and instrument to classify them and rendering them commensurable, do not always comply that easily with the exercise. Actually, the complexity of the production of information about those areas leads itself to the generation of more uncertainties.

The Humboldt Institute, through some of its employees, thus saw the necessity to relink the scope of possible arguments to a certain description of the biodiversity reality of which it is the guarantor. By sharpening arguments on one side and removing grip on the other, by taking away from the field of the debatable what relates to values, attachments and diverging ways of reasoning (aspects which were referred to as subjective during a number of interviews), they render the axiomatic less autonomous but hopefully less prone to being made an object of controversy.

7.2.8 Conclusion

During my fieldwork, the compensation normativity was considered to have a variety of qualities, sometimes seen as advantages or as drawbacks, as specific to some norms or a more general property of

¹⁷⁶ In their definition of autonomous axiomatic, Chateauraynaud and Debaz (2017:588) indicate that “L'incomplétude des systèmes formels, pensée par Gödel en pleine période de positivisme logique, est liée à la possibilité constante de sortie du système, ou de saut dans un autre, qui ne peut être internalisée. Un joueur qui, subitement, s'intéresse à ce qui se passe en dehors du jeu se fera très vite rappeler à l'ordre, bien que cela n'indique pas, ou pas encore, qu'il en soit sorti. Il trace les limites du jeu, ce qui suffit à en menacer l'autonomie.”

environmental norms. The qualities and the valuations of the consequences of those qualities related to the ways it applies uniformly to all actors, to its degrees of rigidity and of fuzziness, and to what it encompasses and what it stays beyond its scope.

When considered as a shared constraint applying uniformly to all actors, the norms may be seen as a guarantee of a degree of legal certainty (for all actors, even if in a different way), and were also called on numerous occasions, “rules of play”. Indeed, they could be conjured as an external and neutral reference over which the actors should virtually have no power, but to which and through which they were collectively bound. When their rigidity prevented or could be used to prevent some actors to do whatever they may want, these rules were then said to help impede what could be called overflows and displacements above or around the norm seen as a kind of barrier. For example, it could provide arguments to the employees of the institution to not to approve actions requested by local actors or planned by companies, and which may be considered undesirable. Indeed, they may be perceived as a form of corruption of the instrument or of the actors seen either as bad students or as wanting undue benefits for themselves.

But, on other occasions, the perceived excessive rigidity was rendering the norm frustrating, like when it was understood that it was dragging down the outcomes by not allowing more desirable things to be done, and even counterproductive, when it was considered that it had some perverse effects, or disempowering, when it didn’t allow the means of its ambitions. The rigidity could even be considered to yield absurd results in extremely counterproductive scenarios of the implementation of the norm, like when favouring above all the security of the process or the demonstration of no net loss was considered leading to a total inefficiency of the compensation measures.

But, while considered rigid in many respects, the norm was also often referred to as being either fuzzy or unclear, whether because of imprecision, missing information or the use of debatable concepts. This was sometimes considered convenient since it allowed to interpret it at will, depending on the actors, but also to produce profound misunderstandings.

In turn, the “rules of play” were understood as guiding the attribution of the responsibilities for the failure of the implementation of the compensations or of the compensations themselves among the different actors, that is the employees as individuals, or the environmental authority or companies as institutions. But, whether too rigid or unclear, and while being considered to render the compensation process more predictable and equitable, the norm was also wielded as an excuse not to act. Depending on the cases, actors may rely on narratives pointing out either the good faith or the hypocrisy of the non-acting actor. Those point either to a badly conceived norm making things impossible or on the contrary put forward excessively literal interpretations generating too many contradictions to be able to do anything. The paralysis produced by literal interpretations amounts to using of the norm against itself. Settling the disputes or resolving the uncertainties then relies on the production of “technical justifications” which, performing a balancing act, have to produce argumentative grasps through and despite both the rigidity and the fuzziness of the norm.

The different qualities attributed to the norms are based on contextual valuations and revaluations done by putting in relation certain aspects of the norm with aspects of human or non-human, individual or institutional actants (for example local actors, companies, hierarchy, types of ecosystems). Both the aspects of the norm and of the actants gets co-valuated in this process and are attributed qualities relating their articulation with specific preoccupations or dilemmas (which may for example relate to the agility of the process, the

consideration for the local population or the environmental benefits). Also, the qualities presented above didn't seem to be mutually exclusive, even when they may seem contradictory (for example the norm may be both too rigid and too accommodating), depending on the situation and types of preoccupations to which these qualities seem to be related to.

In the examples shown, numerous actors expressed an ideal of purification of the evaluation involving removing everything which may be accused of carrying valuations. But, since this process requires the notion that this removal is actually possible, it can also generate troubles when performing evaluations or become the object of conflicts and controversies regarding the remaining of valuations which presence may be denied by actors claiming a certain degree of objectivity. Indeed, while some actors hope that it would be possible to shift from valuation processes to pure evaluations, this displacement cannot be but always incomplete, since a necessary constant interplay between evaluation and a valuation emerge from the inevitable blurs, uncertainties, subjectivities and necessities of interpretation which are themselves valued. Nonetheless, this incompleteness doesn't come from a failure to regulate everything. On the contrary it was considered that areas in which the regulation proved to be excessive lead to results often considered absurd. The norms themselves are therefore not simple regulations of what was previously unregulated, but the expressions of particular takes (which are themselves the product of valuations and power relations) on the tension between regulation and deregulation, between rigidity and flexibility, and ultimately between evaluation and valuation.

This section also raised the question of the hold of the norms and their real or supposed power over the processes they are supposed to orient, that is over the positions that the actors are obliged to take in relation to it. The theoretical abstraction which is inherent in the principle of compensation, and which has already been widely described in the literature discussed in Chapter 3, must be embodied in a specific technical and administrative architecture, then be applied by the actors during each particular operation, generating constant tensions between the compensation's necessary abstraction and the idea of an ecological good. Caught in this tension, the actors of its application try as they can an implementation respecting its technical and legal constraints while seeking how to not allow impacts that would consider too high or that would not be compensated as they think that they 'should'. But, when the hold of the norm comes in the form of a rigidity, this can also render the process mechanical or render the respect of each of the criteria the only goal of the evaluation, causing the loss of focus on their meaning. For the employees, an important tension therefore existed between "doing the right thing" in relation to their employment and to the legal risks related to their activity. Moreover, this tension had to be handled while not losing sight of the 'benefits' for the environment that the projects may bring, benefits which were requested to be tangible as well as measurable.

This section thus pointed out the problem of the coherence that the values and priorities expressed by the norms must have with those of the people implementing it as well as with the concerns the norm is supposed to address. The knowledge about those concerns may come from what is stated in the text of the norm itself or from the discourses which accompanied its launch. Actors are therefore emitting judgements about the norm not only according to their own values but also with regard to the objectives that the norm itself pretends to achieve, that is by using its internally coherent normative repertoire. In the case of the compensations, they may therefore refer to the goal of fostering a way to reach a no net loss of biodiversity.

The processes of valuation of the norm in itself were then aimed at being put into coherence with (or be the basis of) valuations of the attitudes to adopt toward the norm, leading to considerations that to better serve the purpose of the norms it may occasionally be preferable to distance oneself from them. For this reason, the

attitude toward particular aspects of the norms from the part of the authority was sometimes described by employees of the ANLA through the use of qualifiers relative to degrees of laxity or openness, and references to the reality or truth were sometimes opposed to literal interpretations of the norms. Actors are therefore not only valuating what the norms are stating, but also their level of clarity in relation to the degree of freedom and or confusion that may result from it and the type of actions or strategies it is finally understood to allow or impede.

It therefore appears that it exists different modalities of valuation of the norm in itself, but also of what it allows to do or not to do, or what it makes to do when becoming part of a dispositif. Specific aspects of the norm may thus be valuated in specific contexts by specific actors through putting those aspects, as well as their consequences when playing their part within a dispositif, into relation with ontological, axiological and ethical preoccupations within a particular regime of valuation. In turn, this regime of valuation corresponds to the regime of engagement of the actors, that is the type of good pursued, and which can be their interests, the common good or attachments.

The different qualities that the legal norm may acquire for some actors in specific situations, and which may lead them to support it, challenge it or request its modification, can be seen as the result of critical processes relying on the development and use of normative repertoires. There is therefore a correspondence between the regimes of engagement, the regimes of valuation and the normative repertoires which are invoked.

More than simple constraints, legal and technical norms become the lenses, or an addition to previously existing ethnomethods, through which certain situations and events, including material or institutional processes and arrangements, get to be defined, perceived, organized, accounted for, evaluated and discussed. As this section aimed to show, “technical” and legal normative repertoires, which refers to the formalization and diffusion of interpretations, are not only navigated on their own terms but also according to a variety of moral economies¹⁷⁷ by the different actors and according to the situations. While being informal, moral economies are also shared and as a system of moral norms, obligations and expectations, and appear more clearly when usual normative repertoires are the most fuzzy, as well as during what some actors may feel as being episodes of rupture of the moral contract.

The application of the norms through the dispositif inherit of the tensions which were at the heart of its design and which emerges on one hand from the combination of conceptual and procedural strictness and fuzziness, and opposes on the other the description of a general case and the accommodation of particular cases. In both cases, no amount of particularization or generalization, or of rigidity or flexibility, can resolve the issues encountered by the actors when having to deal with a legal instrument blending concepts as arduous as the ones of compensation and of biodiversity.

According to the descriptions made in this section, the interpretations of the norms seem to emerge in friction with different regimes or logics of interpretation. The first one is legal and corresponds to an idea of application of the norm through a close or literal interpretation, with the goal of putting the rule of law at the forefront and the legal responsibility in the case of misapplication. The second one is the technical interpretation, which is supposed to derive from the first through a normative work aimed at homogenizing it and guaranteeing their congruency, puts forward ideals of evaluation and objective criteria based on

¹⁷⁷ I use here the plural to show not only the variety and heterogeneity of situations and actors but also the potentially asymmetric and conflictual type of economies that may be in place when viewed with an attention to positions of power.

professionalism and accumulated experience. The third one corresponds to the subjective interpretation, and is articulated to the previous one through agreement or disagreement over the regimes of proof (see next section) to be privileged, which can appear as an ethical issue. Its descriptions focus on the lack of professionalism and the arbitrary, as well as the reliance on values, beliefs, appearances and direct experience. Finally, the fourth one is what can be referred to as what both precedes and follows the norm, that is political interpretations and the figures of authority and hierarchy, and which articulate themselves to the subjectivities through more or less lawful pressure which can potentially include threats or corruption. This logic relates to desires and interests, whether selfish or oriented toward a greater good (a distinction which cannot be easily made since it is itself a political question), and take the form of power relations. It is the main way through which normative interpretations are articulated with the rest of the society, including politicians and local communities. The fourth logic articulates itself with the first (that is the interests on one hand and the legislative on the other) through what is generally referred to as the political field.

Finally, the modes of articulation of those logics can also describe the ways through which the norms have a hold over the actors, but also how the actors produce for themselves grasps over the interpretation of the norm and over the design or evaluation of the norms, so to find ways to somewhat free themselves from the hold that the norms have over them. Producing an appropriate interpretation of the compensation norms implies for the actors a valuation of what each logic may produce, and to seek at articulating them in ways allowing finding possible alignments or to at least find solutions or “ways out” which avoid antagonizing any of them.

7.3 Delimiting the territory of sound technical justifications

As the previous section showed, the technical qualities of particular reasonings, supported by the ‘professionalism of the technician’, are often invoked as a necessary condition to overcome the deficiencies, gaps and incoherencies of the norm while not falling into an extreme legalism or succumb to subjectivity. I will now introduce examples in which the instructions of the Manual appear to be in a theoretical blur, so to show: how the situations are handled in practice for particular cases, how is managed the articulation between normativity and technicality, what types of argumentative support are found or forged, and how here again the right positioning that technicians should adopt is the product of a constant institutional work.

The first example comes from an internal workshop of the ANLA on compensations, during which the instructor was asked the difference between the first and the second Manual with regard to the ways “semi-natural” and “non-natural” ecosystems should be technically treated so to produce a sound reasoning with regard to their compensation:

Instructor: Los semi-naturales no tienen diferencia, se mantiene que semi-natural es vegetación secundaria y se mantiene que la compensación es la mitad de lo que le dé en el listado de [factores de] compensación (...). "No naturales" quedó escrito en el Manual que la compensación puede ser uno a uno (1:1) siempre y cuando tenga una justificación técnica. No es 1:1 automáticamente. Es 1:1 si la empresa lo propone pues, y si usted está de acuerdo pues lo aceptamos, no entramos a debatir mucho con la empresa en eso. Si la empresa no lo propone, no entramos a decir "y además 1:1 por ecosistemas no naturales" y punto, sino que debe haber una justificación técnica

de por qué cree usted que se debe poner esa compensación. Hemos sugerido que se nos basemos en la aptitud de uso [del área]: si es una aptitud de uso de conservación o protección y usted va a pasar un proyecto allí, pues digamos que está afectando y se puede ir como medio justificar. Por las áreas establecidas por el plan nacional de restauración: si el plan nacional de restauración dice que estas áreas pueden ser o deberían ser para la restauración o preservación, pues no deberían haber proyectos, y si hay proyectos y finalmente lo vamos a aceptar pues es una justificación técnica aceptable para compensar. O porque definitivamente hay un tema de conectividad ecológica: eso lo vimos en algún en algún proyecto que venía la quebrada había una deforestación y después venía la lomita que tenía un bosque en realidad natural, y pues se justificó que al pasar una vía allí evidentemente iba a haber un corte allí de la dinámica que podría haber de bosque a quebrada para la fauna. Digamos que el biótico ya lo explico más profundamente de lo que yo estoy diciendo acá pero digamos que esos tres, por ejemplo esos pueden ser tres criterios para que se explique, pero la llamada es a que no se ponga solo "y 1:1 para ecosistemas no naturales" y sal, sino que se ponga una explicación la más concreta y argumentada técnicamente posible. El Manual lo dice literalmente que debe tener justificación técnica.

As described by the instructor, the Manual indicates that so-called “non-natural” ecosystems are not normally compensated. But, they may potentially be compensated by a factor of 1:1 if the ANLA employee in charge of the evaluation manages to “technically justify” it. However, the manner of carrying out the “technical justification” concerning non-natural areas and the possibility of compensating for them is not suggested in the Manual, and it therefore evolves according to conventions decided internally to the institution on what seems admissible as forms of justification. These “unnatural” environments can, according to the description made by the trainer during the workshop, acquire compensatory value in various ways, such as the categorization of its interest for conservation or by its role in the establishment of an ecological relationship between two sites of interest other than the plot in question. In this second case, linked to the issue of connectivity, the value no longer comes from the area itself but from its arrangement in an ecological geography involving the transformation of the analytical scale (see following Chapter). However, and because compensations work by taking into account (that is what is usually referred to as the compensation’s “currency”) areas and not ecological functions, this will only allow the allotment of a compensating factor, and the compensation will not necessarily aim at restoring the function for which an area was valued as having to be compensated.

The “technical analysis”, to which the trainer expert in compensations constantly refers, can be named as such when it fits into a technical reference system comprising axioms, ontologies, definitions, etc. which serves as a framework for the analysis which must be done. However, within this system the demonstrations still have a certain latitude, because otherwise, as the instructor says, the ANLA would only need lawyers. But, the two combined must ensure the “reduction of subjectivity” that I had mentioned, as well as provide legal guaranties not only to the institution but also to the technicians themselves.

Stopping on the vocabulary used and on examples of reasoning, even without doing an extensive analysis, can reveal a certain understanding of the nature of technical work and the work that technicians do at the ANLA: technical justifications oppose something that would be “automatic”, and express a view that the technicians “believe”, therefore involving a degree of personal conviction; what the company proposes can be “accepted” but also “debated”, showing that not all decisions are unilateral; arguments are “suggested” by the institution, denoting the normative work that is done within it; the fact that it is said that, in some cases, “then

let's say there's an impact and it can somewhat serve as justification", signals that despite the normative work, observations, causalities and arguments may remain in quite a precarious state; finally, it is considered that in some areas "there shouldn't be any project" and that this is a reason why there should be a compensation if there was a project, which shows that all levels of possibilities and impossibilities may not have the same degree of stability.

During the workshop, the instructor took another example about the Manual which led to show once more their embarrassment caused by the absence of clear guidelines, and which echoed the issues for the definition of indicators mentioned above. Indeed, while the Manual proposes different possibilities for doing the compensations, and among them the restoration and conservation of areas, it doesn't indicate the time during which the conservation should be done, nor what conserving, beyond its seemingly obvious meaning, is actually encompassing:

Instructor: Nos estamos agarrando para definir objetivos de conservación, que son temporalidades más que todo y que son bien complicadas (...). Si el objetivo [de un proyecto de compensación] es conservar, por cuanto tiempo es? En eso en realidad no hay una respuesta clara porque el Manual no lo aclara, no hay una norma clara. Pues podemos decir que técnicamente yo puedo poner un objetivo a un mes, un año, y allí puedo decir que lo cumplí. Estamos hablando que en esto podríamos de pronto guardarlo un poco como en el 1517 (el primer Manual). Obviamente siempre la empresa propone un cronograma, y siempre dicen cuanto van a durar, siempre lo propone a tres años, o a cinco, que la licencia dure 3 o veinte años. Si son licencias largas la idea si es que de pronto miremos como justificar técnicamente que la medida de compensación no justifique un impacto pues por el periodo de tiempo que se impacto. Entonces [podríamos llevarlo al] máximo por la duración del proyecto. Mas allá de eso no, no tendría la verdad mucho sentido.

This case is interesting because the instructor clearly considered that, from their point of view, almost any timeframe could be "technically justified". Therefore, the Manual or even external supports for the interpretation of the Manual are of no help for determining what could be a rational and objective decision. So, to resolve the issue, they said that themselves and their colleagues (probably referring to the compensation group or managers) are "discussing that maybe they may somehow" recommend doing the evaluation in a similar fashion to how it was supposed to be done for the first Manual, thus indicating a truly indecisive position. But, after having said that, they made a complete inversion of the way technical justifications were supposed to work, and of their relation to 'objectivity'. Indeed, for licenses with a 'long' duration, they invite the technicians to look for a way to technically justify that the duration of the proposed conservation activity equals the duration of the impacts (itself difficult to define), therefore completely modelling the nature of the technical justification according to a predefined goal. But, they also warned that a longer duration "would actually not make much sense", indicating that in many ways the "sense" of what is right, which may come from practical and moral considerations and valuations, may precede and delimit the frontiers of what is technically sound. Hence, whether goal oriented or delimited by meaningfulness, a practical technical reason in situations of uncertainty largely relies on modes of valuation articulated with normative repertoires, which continuously mixes perspectives from diverse horizons, some of them being internalized by specialists who then aim at diffusing it through the institution.

As such, “technical justifications” may also refer to explicit guidelines of the institution or specific methodologies that have been developed elsewhere and then adopted and imposed during specific procedures. For example, as one expert of the ANLA indicates, they use for the identification and classification of the vegetation cover from satellite maps a well-known methodology called Corin Land Cover:

La metodología Corine Land Cover es la que utilizamos. Aquí no hay parámetros míos ni de la empresa, es la metodología de Corine Land Cover, ahí tiene el desarrollo metodológico, hay un documento que hizo Corine Land Cover que dice cuáles son los parámetros que se debe seguir. (ANLA11)

As this methodology is put forward, it then becomes the frame of reference for the analysis to make and to evaluate arguments regarding the type of vegetation cover of the area that is studied, the parameters and normative repertoire being thus externalized to other sources. As expressed before, those sources might refer to a professional curriculum, including the initial training and subsequent experiences, as well as all the tools and instruments developed and made available to numerous actors, including the academia but also companies and NGOs.

Nonetheless, those other sources are not stable and vary along with scientific traditions and their circulations. Indeed, one of my interviewees working for the ANLA suggested a number of elements allowing putting the type of “technical justifications” prevailing at a given time into a situated historical context of political and socio-geographical transformations. As we were discussing the successive Colombian environmental laws and the context in which the first Manual was designed, they came back on the relative isolation in which Colombia was at the international level until the 90s, moment in which the economic aperture following the new constitution of 1991 and, among other things, the signature of the Convention on Biological Diversity, really transformed the scale at which Colombia was existing as a country, externally but also internally. Indeed, this new openness to the international was also put in parallel with the ways in which its geography, with the three cordilleras and numerous areas of difficult access, had generated discontinuities in the presence of the State in the different regions and isolated from each other populations living in the different areas. The latter therefore were, in the opinion of the interviewee, mostly focused on resolving their issues at a local level. As the State was opening itself on the outside, it also aimed at unifying the country itself. This ought to be done at least in part through the construction of new roads, as well as new large hydroelectric power plants along with a national grid, which would render the different areas of the country interdependent (or to allow further extractivism of certain areas to the profit of others, depending on the perspective). These transformations are directly related to the strong tensions between centralism and regional autonomy that have existed throughout Colombia’s history, to which the armed conflict is largely attributed, and which remain unresolved today. This larger contextualization was therefore crucial to understand through a variety of socioecological lenses the ways tensions between unity and plurality have existed in Colombia.

The conversation then continued toward putting into perspective the historical relation between scientific knowledge and its situated character. In particular, it focused on the evolution and diffusion of notions in ecology and ecological management, and how the goal and framing of certain teachings strongly influence the kind of technical evaluation that was allowed. As mentioned in Chapter 4, tree-for-tree forestal compensations previous to the biodiversity offsets Manual are looked at now by many people I’ve talked to as terrible, since they were a negation of the biodiversity by focusing almost exclusively on vegetal mass and silviculture activities. The first step was therefore, as expressed by the employee of the ANLA with a touch of humour and

exaggeration, to recognize that not all vegetal masses were identical. But this was seemingly coherent with the fact that most employees of the National Institute of Renewable Natural Resources and Environment (INDIRENA), the public institution in charge of the compensations at the time, were forest engineers. And those forest engineers were working according to a training that was provided at the time by people trained in Spain who were directly importing visions and methods regardless of the particularities of the country or of the soil:

Nosotros veníamos de una escuela en biología muy muy española, entonces en estas escuelas [de ingenieros forestales] eran pues, y básicamente las reforestaciones estuvieron manejadas por toda esta escuela española, que le decía a uno que tenía que poner pino o sea que sujete el suelo más, o sea que es cúbralo, o sea que es que exista una capa vegetal independiente de lo que sea, entonces póngale pino que eso crece rápido, las especies de rápido crecimiento, las exóticas y todo esto porque crecen rápido y son bonitas (...), o sea tú veías fotos de la época y veías las reforestaciones y efectivamente eran monocultivos que tú podías aprovechar en cualquier momento pues porque realmente eran árboles con fines de madera, de papel y cosas de esas, pero pues no no era coherente con los ecosistemas antes establecidos. Y digamos los que educaron a toda esta generación pues eran básicamente españoles, entonces era lo que ellos veían en su país y funcionaba bien allá entonces se traen como todo y digamos las escuelas de biología todas empezaron a crecer así, (...) digamos veníamos de esta escuela en la cual estaban los españoles imponiendo esa visión del mundo. (ANLA1)

The ‘Spanish school’ was also teaching the Holdridge Life Zones, which is a method invented in 1947 to correlate world plant formations with simple climatic data, therefore allowing (or at least proposing) to determine an ecosystem by crossing information like temperature, elevation and humidity. But, because this was a simplistic adaptation of an ecological methodology coming from one country to another, based on presuppositions of identity and reproducibility, the interviewee continued recounting, some researchers started to question those methods. Considering that they weren’t working for Colombia, they thus advocated instead for the use of the concept of biomes.

After that, Dutch researchers came and, following their “Dutch school”, would apply phytosociological methods which focus on the study of groups of species of plant usually found together. They generated very detailed descriptions but limited themselves to the greater Bogota area. Around the same time, researchers from the Colombia National University started a work of classification of ecosystems through the understanding of the geomorphological and evolutionary history of the country, taking as a principle that the three cordilleras and the two seas taken in a long history compressing biodiversity had made that every area had its particularities. Finally, “se identificaron estas zonas y se categorizó todo el país; esas categorías digamos son las con las cuales uno se forma en biología” (ANLA1).

On top of those diverging methodologies to assess and categorize ecosystems, another one would be imported in order to assess and categorize the types of cover of the land, whereas natural or artificial. And this is where we go back to the previously mentioned Corin Land Cover methodology:

Algo que nos cagó muchísimo debo decir, fue una escuela francesa que impuso un modelo que se llama el Corin Land Cover, (...) o sea te lo digo de manera muy básica como lo entiendo yo, pues porque siempre me parece una mierda pero pues... El Corin Land Cover es básicamente una metodología para identificar ecosistemas y coberturas de la tierra, esto [viene de] un convenio que hizo el instituto geográfico Agustín Codazzi, con la embajada francesa tal vez? (...) Entonces uno de los institutos del país que es de los más reconocidos, pues porque hace la cartografía del país, hace este convenio y dice “oiga, me sirve, quiero implementar la metodología que desarrollaron en Francia

y que utilizan". Y se impone dentro de los estudios de impacto ambiental la metodología Corine Land Cover, que es la que utilizamos ahora. Y todo esa descripción que se había hecho de las particularidades de Colombia, pues se queda como allí, describiendo los ecosistemas, y finalmente es de donde sale el mapa de ecosistemas con el que nosotros cruzamos todas las categorías. Pero nos impusieron el Corine Land Cover en las coberturas de la tierra. O sea hay unas definiciones que no terminan de cuadrar, o sea hay unas sábanas, que entiendo yo que es la lectura que podría ser Francia de esa sabana, que es como un pastizal, pero para nosotros no son pastizales porque las sabanas tienen unas características de disponibilidad de agua y unas especies muy particulares, pero entonces tocó como irlas homologando para poder cuadrar. (ANLA1)

Being again another imported methodology, the Corine Land Cover which they have to use is the source of anger from the interviewee. For them, not only it represents the negation of the studies made by Colombian scientists, by it is also the negation of the ecological particularities of Colombia, and of the knowledge that has to be produced about it. This unfortunate transposition of situated knowledge which pretends to be universal leads to what is considered to be misinterpretations which cannot be but detrimental to the evaluations.

Finally, this rough account allows to see how may become articulated the sense of the geography of a country, international relations and transnational circulation of concepts as well as state-building processes through not only infrastructures but also unified rules and management instruments, and how they may directly relate to the type of technical justifications. Every "school" which influenced the ways ecosystems and land cover were understood and classified put a different emphasis on some of their characteristics, whether their nature or their dynamics, but also had different motives for differentiating them and developing those classifications.

In this section, I didn't compare what the employee of the ANLA interviewed recounted of the history of the ecological traditions in Colombia with what may be expressed by other sources, because the exact historical informations are not critical. What matters is how the interviewee recalled this history, and how they understand and experience the way it impacted and still impacts the work of people working like them as technicians in public administrations, and in particular the consequences of the importation of sometimes inappropriate or incoherent methods and the awkwardness and uneasiness of having to deal with their multiplication as superposed layers. As we will further see, this design of methodologies and classifications intra-act with certain visions of the territory, which they therefore shape as much as they're supposed to represent it.

While technical justifications usually rely on the presumption of a stabilized scientific knowledge, and avoid entering into the controversies which may exist between scientists, the example developed here shows that this knowledge is nonetheless itself understood as being situated and disputable. Moreover, if some specific studies proposed by companies are sometimes explicitly based on scientific work and in particular on specific methodologies developed by some researchers (as it is the case for the study of connectivity, for example, which is discussed in the chapter focusing on impacts' scales), they seemed to usually consider it as consensual and to fail to acknowledge the controversies around particular instruments. This adds another layer of elements to be valued by the technicians of the ANLA. Indeed, while the data considered has to be evaluated according to its correspondence to a methodology, they also have to evaluate at the same time the correspondence of this methodology for the expressed purpose, as well as value the methodology itself according to its geographical and historical situatedness, including its cultural and ontological premises, and how those relate to ethical preoccupations and ideas of epistemological justice.

7.4 Regimes of proof and subjectivity

The development of compensation guidelines was aimed, among other things and as mentioned previously, to counter what was considered as the previous too-subjective process, in particular regarding the attribution of compensation factors. But the factors are not the only elements considered to be potentially subjected to subjective judgements, and different actors pointed out during my fieldwork or interviews a number of other domains or objects of a potential subjectivity, along with its source and motives, as well as reasons of its undesirableness and strategies for its elimination.

As we will see, the different possible modes of emergence of subjectivities and the ways to overcome them that were described are the direct opposite of the three forms of production of the tangible described by Chateauraynaud and Debaz (2017:132). What is tangible, according to them, are descriptions, elements or facts, and more generally proofs, that are therefore resisting the tests of the experience, of the emergence of new events and of the evolution of the agreements over the interpretation of signs. It can be produced through either “a space of calculation deployed in an autonomous axiomatic, the production of data structures based on an isomorphism constraint, depending on a set of categories and equivalence relations, and finally, the generation of cross-checks in connection with the experience”*. But it is the articulation between the three which stabilizes the tangibility of a given thing. Indeed, these authors also insist on the importance of the gradual aspect of tangibility, that is the possibility of its emergence first as a sign difficult to perceive, which may then start to converge with other indices, to finally become obvious or difficult to deny.

7.4.1 Axiomatic

Firstly, the reinforcing and evolution of the space of calculation is done through the production of new norms, manuals, methodologies and techniques. Being “objective” was in many cases explicitly related to a behaviour consisting of applying them strictly, thus amounting to identify the frontier between objectivity and subjectivity with the delimitation, hoped to be the clearest possible, between what is normatively correct and what isn't. Nonetheless, norms, manuals, methodologies and techniques are all providing orientations which cannot but be imperfect and incomplete. The problem is that the norm often cannot be literally applied, that methodologies bring along new uncertainties and contradictions, and that their application also depends on the actual material capacity to produce proofs through reasonings based on them.

In my interviews and observations, certain characteristics of norms and methodologies largely relating to their incompleteness were inducing different levels of subjectivity. For example, those levels depended on: the legitimacy of those who produced the norm or methodology; the subjectivity or arbitrariness of the criteria chosen, as well as the fact that they represented at least a minimum, or were basic or optimum; the difficulty of their application; their scope; their flexibility, strictness and clarity of definition; and their variability among diverse cases and in time.

During an interview, one ‘physical’ expert recounted to me the transformation of the requirements for the evaluation of impacts in the EIA, and in particular the emergence of the use of Leopold matrices, which became used to qualify the impacts through the evaluation of the relation between each activity planned and each ‘component’ of the environment of the project. When asked what those evolutions meant relatively to the

consideration of impacts, this expert, following the same line of thought than other people I've interviewed, indicated that the complexification of the methodologies and instruments led to the enhancement of the objectivity of the studies:

[Sirve para] hacerle un análisis a los impactos más profundos y más objetivos, porque pues sigue, de todas maneras, la subjetividad siempre va a quedar en la evaluación del impacto, ¿no? Pero con la evaluación ya con la matriz multicriterio, si se cierran brechas en cuanto a que no quede como tan subjetivo, y se le da un indicador al impacto con una calificación. (ANLA8)

But, while the Leopold matrices may be considered as a way to close 'subjectivity gaps', the implementation of novel instruments in the EIA for the evaluation of impacts can also be seen as opening new avenues for what will be perceived as subjective reasonings, as expressed by a compensation specialist working for an NGO:

Si tú ves lo que te piden en un estudio impacto ambiental en Colombia es absurdo, las exigencias, ¿no? ¡[Es] altísimo! y te piden unos estudios que tú dices "¡no!", que tienes que estudiar la microflora, la flora, la "yo no sé qué", mejor dicho, miles de estudios, pero como desconectados totalmente de la realidad, de cierta manera, (...) porque tú tienes que hacer miles de inventarios, estudios, vainas, pero finalmente cuando tienes que evaluar el impacto, pues, no hay metodologías, ¿no?. Tú simplemente pones la lista de las especies de esto, pero no tienes que hacer el análisis: "bueno, y esta especie, cómo se va a ver afectado por esta vía" ... (...). Se utilizan todavía unas metodologías que son muy subjetivas, que son más las matrices de Leopold, donde tú dices "bueno, esto debe tener impacto medio, alto,...", son cualitativos, porque obviamente...

-Y estas matrices, para ti no tienen bases...

¿Científicas, sólidas? No. No, eso es un poco de criterio "de experto", ¿no? Es muy de criterio 'experto', porque obviamente no tenemos la información de cómo una vía puede afectar ciertas especies, no tengo ni idea, en Colombia, o qué significa la fragmentación de sus ecosistemas, no tengo ni idea. Entonces hay una incertidumbre tan grande, entonces no sé. Entonces estamos en sistemas muy complejos, la incertidumbre muy grande, hay otros factores, entonces el señor va a decir "mire, es que yo no soy el culpable de que se esté perdiendo esto, que hay otros señores que también están contaminando, y yo no sé", digamos termina... (TNC3)

Similarly to the critiques detailed above about the Corin Land Cover methodology, new instruments may also carry along new issues, new controversies and new shortcomings. For example, another type of analysis which was also considered as being largely subjective was the implementation of the mitigation hierarchy (like the areas of influence, it largely relates to issues of scale, and is also further analysed in the next Chapter). But one employee of another environmental NGO considered that there is a relation of interdependence between limitations of the analysis, technical capacities and subjective judgements:

[La análisis de la jerarquía de la mitigación] está limitada en la medida en que las autoridades o los funcionarios de las autoridades no tienen las capacidades para evaluar si realmente lo que el proyecto está escribiendo es acertado o no, muchas veces es muy subjetivo. (TNC1)

The analysis submitted by the company is subjective and, as the capacity (referring to a technical capacity understood in terms of training and of means) of the employees of the environmental authority to evaluate it is limited, their analysis is also said to be subjective. Subjectivity and its associated room for dissent therefore emerge in this case from the encounter of the uncertainty of the parameters, somewhat limited means of inquiry and an expectation for high levels of detail. It does not come from the risks caused by a new technology or the

possible advent of unknown events, but is caused by the complexification of the ways to account for certain activities and their consequences, that is the complexification of the space of calculation which, as autonomous as it may be, still have to relate to actants remaining in the milieu in interaction.

Right after extolling the virtues of the Leopold matrices, the employee of the ANLA quoted above admitted that the goal wasn't to reach an abstract objectivity, but to be able to subject the companies to standards that would oblige them to provide less minimalist studies:

Nosotros cuando hacemos la evaluación de impactos desafortunadamente el análisis [hecho por las empresas] de las matrices son muy pobres, y vuelvo a lo que te decía antes: digamos que las empresas presentan en los estudios unos análisis como mínimo, y casi siendo pues que el proyecto no genera ningún impacto, ¿sí? Pues para uno, hay cosas pues que son muy claras y muy evidentes ¿sí?, y ellos dicen: "no, no va a pasar nada, no va a haber ningún impacto", entonces es eso. (...) Entonces ellos a veces como que tratan de negar los impactos. (...) Es que la subjetividad se da es porque colocan lo que les conviene. (ANLA8)

The subjectivity that the companies are said to display and that their studies show is therefore one of convenience, which translates itself in a reluctance to accept the reality of some impacts, even when they are "clear" and "obvious" for the evaluator. Thus here again, the methodologies are first and foremost a way to align subjectivities, but their multiplication and their greater level of detail, rendering them more "rigorous", are nonetheless understood as aiming toward a horizon of objectivity (this time the evaluator is talking about the delimitation of areas of influence):

Yo creo que toca seguir evolucionando, toca seguir evolucionando hasta llegar a algo ya que nos permita algo menos subjetivo y más objetivo, porque todavía sigue, hay un grado importante de subjetividad y, pues de hecho las empresas siempre, siempre intentan recortar sus áreas de influencia ¿sí? o muchos temas, y pues principalmente por temas económicos, entonces eso sí, todavía toca evolucionar más y dejar temas como unos puntos de control, que se incluyan los puntos de control en las áreas de influencia y que realmente esos límites correspondan a unos límites más objetivos. (ANLA8)

This extract shows that the diminution of subjectivity and augmentation of objectivity are seen as complementary but are not simply the reverse of one another. They relate in fact to different types of processes and are different in nature. Objectivity is sometimes seen through a positivist lens and sometimes as an interpersonal achievement, but always a processual struggle, while subjectivity can either be used or have to be contained.

In another interview, one specialist working for a consultancy doing EIA for companies mentioned another interesting way through which they considered that subjective interpretations regarding 'what is' could be reduced. While the development of new concepts and methodologies can create new uncertainties, the development of the use of consensual instruments of observation and recording can be a way to avoid the generation of doubts through the production of undeniable proofs:

Yo creo que el tema de monitoreo también ha avanzado, o sea, uno poder permitir hacer monitoreos que hace unos años, pues hace unos diez años no se hacían con las trampa cámaras, le podías poner los vídeos y dejarlos ahí y esperar qué animal llegue, eso entonces también permite como esa evolución de que le puede en cierto momento quitar su subjetividad como a la interpretación de que sí estuvo o no estuvo, realmente no siempre se hacen registros, pero son registros que quedan evidenciados. (CONSUL2)

For Daston & Galison (in Chateauraynaud and Debaz 2017; 2007), the possible agreement over the objectivity of scientific imagery comes from its objectification at the different moments of its transformation: its first capture is considered to be truth-to-nature, then its reproduction or archival rely on a mechanical objectivity, and then its interpretation by experts is done on the basis of their trained-judgement. This is an example illustrating the circulation between and the complementarity of the three different forms of production of tangibility.

Nonetheless, the constant development of new concepts and parameters let appear a sort of race between the aim for the complexification of the evaluation and the production of methods to handle this complexity. Indeed, in all the moments in which there may be discrepancies (which always exist in some ways), it is then feared that decisions would rely on the appreciation of the technicians, either by making up their own criteria, or by choosing among existing and available methods without coordination, as expressed by one of the employees with regard to the rise of the evaluation of ecosystem services:

Obviamente pues hay muchos temas en el tema de servicios ecosistémicos: no solamente la regulación, sino también la operatividad de la misma norma, la que hace falta todavía materializar, porque conocemos que hay unos servicios ecosistémicos, pero todavía la forma de calcularlo sigue siendo muy etérea, o muy subjetiva, o muy al gusto, digamos, del método de valoración económica que decidas optar, y mal que bien digamos. (ANLA9)

The juxtaposition of the adjectives ‘ethereal’, ‘subjective’ and ‘to taste’, shows again the interrelation that is made between the issue of fuzziness, the affirmation of an individual perspective and a choice among possibilities on the basis of personal preference.

This problem of the evolution and complexification of the requirements of the studies and the shortfalls this creates in terms of point of reference was also described to me by an employee of a consultancy with regard to the ways in which cumulative impacts are analysed in the EIA and in which the evaluation of this analysis is done by employees of the ANLA:

Ese tema del impacto acumulativo, sinérgicos y la coexistencia y superposición de proyectos, se viene trabajando hace relativamente muy poco, donde uno establece que incluso no hay metodología, ya es como la metodología de la experticia que uno como consultor haga, porque no tiene... Entonces también se presta mucho como a la interpretación que el funcionario de la autoridad y de la ANLA haga, ¿cierto?, porque no tiene una metodología establecida a nivel país que nos diga “usted calcula sus impactos acumulativos y sinérgicos de esa manera”, y siendo así, pues le quita[ría] subjetividad a las cosas. Me parece muy importante porque (...) uno tiene que saber qué hay en el territorio, para saber si realmente permite o no permite el establecimiento de proyectos, pero esos impactos acumulativos y sinérgicos no dejan de ser muy conceptuales y muy subjetivos. (CONSUL2)

While the lack of methodology obliges the consultant to rely on its own expertise, on the other side employees of the ANLA will have to “interpret” what is presented to them, that is to seemingly evaluate through a deficient dispositif which may thus allow valuation ‘leaks’ into the evaluation. Interestingly, the last part of this extract shows that actors may perceive a relation between the degree of conceptuality of a particular type of analysis and the degree of subjectivity of the analysis. But a particular conceptualization, to bring more clarity to the actors and allow them to understand in the clearest way what it implies, must be harnessed back to the practical actions it may relate to, that is that it has to be translated into particular methodologies.

On the other hand, the consultant also expressed their perceived negative consequences of the subjectivity of the evaluators of the ANLA, not so much in terms of heterogeneity or unfairness, but because their logic

seemed difficult to follow and that “then to deal with this subjectivity becomes very complex”. Here, the complexity does not refer to the complexity of the studies or to the conceptual complexity without methodology, but to the complexity to understand the meanings and motives of the requirements, and to find a common logical ground (or understand the ‘subjective’ logic and adapt to it) to respond to them in ways that would satisfy the employees of the authority.

7.4.2 Conventuality

The issue of subjectivity also relates to problems of knowledge uncertainty, as was already mentioned in the previous chapters, in particular in relation to the creation of indicators of evaluation of the “effectivity of the compensations” or to the fact that forest compensations established before the design of the Manual of compensations were based on a compensation factor subjectively established depending on the will of the evaluator, and that therefore the emergence of the Manual was exemplifying the commitment of the State to eliminate subjectivity in this process. As such, the development of methodologies is not only a way to reduce subjectivity, but also to help actors who may feel lost in conceptual blur or in uncertainties about what they should do and what may happen in the future. But methodologies themselves sometimes lack clarity, and the different actors have to adjust to one another and agree on conventional interpretations.

For example, one employee of the ANLA that I’ve interviewed considered that, while the absence of “technical documentation” orienting the establishment of factors could let think that their attribution was subjective, the review of past licences made them find out that in reality most factors were similar for similar types of vegetation (differentiating only between forest and secondary vegetation). In the absence of official guidelines, they therefore imagined that there had to be a form of traditional transmission of what had to be considered appropriate factors:

Antes del Manual la evaluación era así. Pues, digamos que no había una metodología, y eso me gusta del Manual, porque ahí le eliminamos subjetividad, efectivamente, ese es un ejemplo muy bien dado y muy claro de la eliminación de la subjetividad. (...) Antes te decía “haga una reforestación” y ponía un factor arbitrario –no sé si “arbitrario” sea la palabra– o personal, sí, subjetivo. Parece subjetivo porque no hay una documentación técnica, pero en realidad los factores, si usted mira las licencias que hay, siempre dan los mismos, o sea, casi siempre que era bosque llegaban y decían “compense 5 a 1”, casi siempre que era vegetación secundaria “compense 3 a 1”, o sea, casi siempre eran los mismos.

- Había como normas implícitas?

Sí, exacto, eran más de costumbre, pero sí, existían, porque por tradición oral, yo creo que se transmitían, entonces el biótico que no sabía qué hacer, iba y le preguntaba al otro y “no, eso es 1 a 5”, “1 a 3”. (...) Y en realidad sí se fue generando un estándar, pero un estándar que no tenía como ese trasfondo técnico que de pronto el Manual sí lo trae. (ANLA11)

As shown by this extract, the limits between normativity and subjectivity, or homogeneity and heterogeneity, are not only coming from the application of formal guidelines versus doing what one thinks, but are much blurrier. Indeed, while the norms cannot but still require interpretations, subjectivities are also getting implicitly aligned through the share of work practices.

Nonetheless, this expert of the compensation group of the ANLA, on the basis of their experience of meetings with companies coming to present their compensation plans or raise their doubts, also described the

relation between subjectivity and interpretations as well as the nature and goal of the explicit normative work that gets done during those meetings:

Las reuniones realmente efectivas, son con esas empresas y con esas consultoras cuando (...) vienen y dicen: "oiga, estamos haciendo un plan, tenemos este problema queremos enfocarlo así, pero díganos si se puede o no". (...) Y uno sí les puede decir: "ojo que este puede ser..., ojo que con esto, ojo con esto, ojo que la norma...". Ellos pueden tener una interpretación distinta a la que tiene la ANLA en la norma. Volvemos a la parte un poco interpretativa: entonces pues puede que haya interpretación, puede que sea un poco subjetivo, pero por lo menos que los dos estemos interpretando lo mismo, es importante. (ANLA11)

This quote, from an ANLA employee who was also considering that subjectivity had to be reduced through the means of professionalism, so to make objective evaluations, clearly demonstrates that this objectivity, while mainly attached to 'truth' of the norm, may also be commonly understood as the agreement between parties over 'what is'. The problem of subjectivity is therefore not an absolute one, regarding the nature of the reasoning, but a problem of relativity and variability. As long as agreements can be found and that those can be stabilized over time, then the subjectivities may merge into, with or as 'the' objectivity. While this reaffirms that one of the main differences between the two is the one of plurality/heterogeneity versus unity/homogeneity, it also put emphasis on the processual nature of the realization of objectivity as an organizational accomplishment to be constantly monitored and reworked. On the other hand, while in the case described both sides have to agree, it is important to keep in mind that actors have asymmetrical hegemonic capabilities.

7.4.3 Phenomenology

While it is considered that, in the cases in which the uncertainty is high or the parameters uncertain, a higher-than-usual subjectivity could be accepted, this objectification of the evaluation is not considered to equal the randomization of the possible forms of reasoning or of the search for common grasps allowing agreements on the level of tangibility of what is put forward. Actually, in those cases, the figure considered to be the most reliable and to have the highest trustworthiness is the one of the expert, as an employee of the ANLA explained to me by taking as an example of high uncertainty the situations in which the precautionary principle may be invoked:

Cuando las normas dejan esos huequitos, pues ahí debe entrar la interpretación y la interpretación normalmente favorece al medio ambiente. Pero pues no favorece al medio ambiente siendo arbitrario, favorece al medio ambiente desde que usted profesional y técnicamente tenga una justificación para decir que "no". Acá funciona el principio de precaución, que es también muy común ambientalmente en muchas partes del mundo. [Podrían decir:] "y es que usted no sabe, pero usted intuye", obviamente, ahí sí es "vamos a la subjetividad mayor", pero no van a la universidad y le preguntan al estudiante de cuarto semestre: "usted qué le parece", "usted cree que...". Un profesional serio, responsable, reconocido, intuye que eso puede ser dañino, entonces dice "yo creo que eso puede ser dañino", la empresa no demuestra que no es dañino, [entonces] por principio de precaución eso no se hace. (ANLA11)

Intuitions from diverse persons, considered as forms of subjectivity, therefore aren't equivalent. The type of intuition that is looked for is, as was expressed in a previous section, forged by a specific training and

previous professional experiences, so that one particular case can be interpreted in their light, that is through a perceptual work allowing to contrast, to compare and to put in context. But, since the analysis rely on the views of an expert which may not possibly be tallied with other forms of proof production, this truth value of the opinion of the expert therefore rely on the trust that can be placed in them, as shown by the fact that the credit given to what they “believe” is based on the fact that they are considered “serious”, “responsible” and “renowned”.

The importance of the experience and the professional ‘sense of what makes sense’ was also put forward by a senior manager of the ANLA with regard to the ways requirements to the company were decided, and the point up to which they should go:

Siempre las discusiones las centramos a que se cumpla con lo que establece la normatividad y la parte de lo que es técnico. Ya después viene la percepción: hasta dónde es sensato pedir o no pedir [ciertos requerimientos], ¿no? Ahí sí es un poco más de percepción y de valoración de experiencias que hemos tenido de otros proyectos, valorando lo que ha pasado en otros proyectos y además para darle también unidad de criterio, que a todos los administrados se les maneje de manera igual, sino que empecemos a decir “es que a este le pegue más duro, y a este le dejé más suave”, porque eso es riesgoso, que nos lo demanden. Y aquí, en el país todo el mundo sabe a quién le dieron licencia y cómo se la dieron, y entonces “y a mí por qué me la están negando, y a él sí se la dio”. Eso ha pasado. (ANLA15)

As the manager notes the existence of an unclear line of demarcation between what is right and what isn’t, the reference is at first the professionalism and the experience, but the valuation is made by comparison to other projects (which they call ‘valuing the experiences’, that is giving an interpretation of past experience a value in the task at hand), and in the light of the risks for the institution if their duty of equity wasn’t respected.

As was already suggested in the section about the relations between the ANLA and the companies, the organization of the different formal and informal encounters and the diverse modes of communications between the institutions and, more importantly, between the individuals working for them do not merely organize the transmission of strictly stable and medium-insensitive informations. Actually, informations and their interpretations are also partially shaped through this process of communicating and discussing them. As such, employees of companies, who sometimes considered that employees of the ANLA were often subjective, were also perceiving that the relation that they may establish with them wasn’t without consequences:

Ese tema como personal (...) también influye mucho, como el feeling que haya entre las personas. Y eso pasa, cuando son procesos que se involucran tantas personas, eso puede llegar a afectar un poquito la objetividad de la evaluación. (MiningComp1)

The quality of the “feeling” between the different actors is said to affect the “objectivity” of the evaluation in the sense that the external normative referential may be partially replaced by the intersubjective perspectives. Indeed, a ‘good feeling’ would imply to trust what other actors are doing, that is to trust the inter-individual alignment of modes of valuation through the agreement on common grasps for determining and hierarchizing matters of importance and relevance, and the fact that the others will do a ‘good job’ in valuating and in planning and executing their project. It is therefore a sort of conventionalist agreement not on the basis of concrete connections between signs, but on the trust that those connections exist:

Definitivamente sí [puede quedar subjetividad], pero desde mi posición sigue siendo que en la medida en que sea lo más reducido posible y en casos muy específicos pues va a ser más fácil. Porque si entramos a una subjetividad general, entonces entramos a que “a mí me gustó”, o de pronto “a mí me

cae bien esa empresa y yo creo que esa empresa hace buenos proyectos, entonces digámosle que sí y confiemos en que ellos lo van a hacer bien”. (ANLA11)

The problem is seen as being both coming from the trust placed by the experts in their own judgement as well as in the trust they may place in other actors. The trust that is placed in the experts and in their “trained judgement” by others on the basis of their professional record therefore contrasts with both the mistrust characterizing the trust that experts place on themselves and the mistrust of the companies or local communities. It is this trust which allows considering that what may only be seen as the product of a specific perception becomes also a demonstration through a collective agreement, as long as no event crops up and allows questioning this trust and the isomorphism that was presupposed between what some actors were perceiving and what others were perceiving.

7.4.4 Articulations of the three regimes

While issues may emerge due to the disarticulation of the three forms of reasonings aiming at the production of proof, each of them is also seen as a possible source of subjectivity. The way this question of subjectivity emerged in the fieldwork shows that evaluation dispositifs are perceived as being constantly threatened and that the different evaluations produced are themselves morally valued by putting them in relation to ideals of the good work, good study, good methodology, good intentions, etc. But beyond the issue of subjectivity, which is in many cases associated with judgements that may be inappropriate but of good faith, lies one that is perceived as manipulatory, applied through means of pressure, lobbying or cheating, and which is oriented toward the interests of specific groups or persons. The relation between objectivity and subjectivity therefore have to do in many ways with moral preoccupations and in particular the morality of the definition of a shared situated objectivity and of the validity of proofs.

From the point of view of the institution, eliminating the subjectivity in environmental aspects means to aim at folding all the production and interpretation of data onto strictly technical procedures and continuously reestablished criteria of validity and quality, while avoiding particular perceptions to generate uncertainties. For an employee of the ANLA, that I had interviewed because they had participated in the evaluation of a project of hydroelectric power plant that finally got rejected, the strength of their evaluation and of their demonstration, despite possible imperfections, was impeding any alternative decision:

Pues obviamente no es perfecto pero es la conclusión a la cual llegamos al final, y pues afortunadamente tanto el concepto [el documento administrativo que niega la licencia al proyecto] como el concepto del recurso de reposición están muy bien argumentados y muy bien soportado, entonces digamos, no hay como mucho lugar a la subjetividad en el tema biótico. (ANLA4)

While being pleased with the fact that a good and well-supported argumentation reduces the extent of space within which subjectivity could possibly emerge with regard to the analysis of biotic impacts, the same experts also lamented in the interview that very little attention was given in the EIAs to the “subjective feeling” of the people who may be impacted by a project. This absence of consideration of their own view with regard to their living conditions, culture and history, and therefore about how they considered to be impacted, was thus allowing companies to assess the impacts on the basis of purely material cold descriptions and analysis. It could be elaborated on the differences made by these interviewees between what relates to the biotic impacts and the human impacts, but what is described here is that the objectification of the perspectives leads in both

cases to the negation of certain subjectivities. Indeed, what could be understood as the subjectivity of certain subjects becomes minimized through a classical scientific process implying first and foremost the objectification of the subjects studied so that they may become the objects of study. The norm is therefore above all the hegemonization of one particular subjectivity, as it is admitted even by some of those who participated in its elaboration. This renders particularly difficult taking into account the subjectivities least compatible and most irreducible, that is the ones of the actors who have the least learned or accepted the language of the forms of proof production of the evaluation dispositif.

7.4.5 Moral dilemmas

As expressed before, the elimination of the subjectivity was sometimes considered as the professional responsibility the employees of the environmental authority. Nonetheless, two opposite ways of handling their task were described: they were either trying to stretch the norm so that the decisions may be the closest possible to their opinion (that is the valuation of the situation according to particular preoccupations), or to beat their own tendencies to insert their preoccupations into their work by always going back to the norm and aiming at remaining as close as possible to what is understood that its authors meant. To the responsibility of the employees of a public institution for eliminating the subjectivity corresponds a trust that they must have in the institutions responsible for designing the policies they have to apply and in the way they designed them, or at least an understanding of where lies the role and responsibility of each institution and that they shouldn't exceed their attributions, even when they do not agree with some aspects of the norm. Indeed, what was considered to steer away the decisions and practical actions from the norm was in part its subjective application but also its deficient application or even its blunt non-application.

As the interpretations of the norm have to circulate in the institution, the confidence in it should also be fostered, so that employees may trust that it guarantees the righteous consideration of the environment and of the possible damages they may be personally concerned with, and rest their vigilance on this trust. This rejoins what was described about the evaluation of the 'no net loss' of biodiversity which, despite being potentially complex, should only be done by the ANLA's employees by following the methodology and trusting that those who made it did it with the required care. But, in any case, the description that is given by the norm of the no net loss is authoritative and imposes itself as a criterion of objectivity and tangibility. To go beyond it without being accused of allowing themselves to be subjective therefore requires from the employees of the institution to find other grasps outside of this self-legitimizing autonomous axiomatic system.

Controversies over a project in itself or its compensations or any of its aspects may emerge between different actors who may be explicitly engaged in the project or who may feel concerned by it, but employees of the institution can also face moral dilemmas when the orientations of the norm enters in conflict with others they would have favoured, on the basis of the valuation of facts that are not strictly emerging from the space of calculation of the compensations. They may then try to find possible modes of conciliation, that is to try to assess the degree of compatibility and find a possible articulation or freedom of movement in one side or another. When no means of compatibilization are found, they may have to take an imperfect or difficult decision and cope with it, whether it involved the mistreatment of the norm or putting aside personal or conventional preferences. Therefore, in order to redefine the limits between the possible and the impossible as

well as between the objective and the subjective, actors may try to generate new grasps allowing rendering tangible a fact in a way that can be commonly applied in reasonings based on the compensation framework.

7.4.6 Conclusion

To sum up, the regimes of proof and of subjectivity relates to moral valuations in the following ways. While the norm is a constraint shared by the actors, it also produces a space of calculation which serves as common reference. In this sense, by aiming at the reduction of the field of possibilities, the production of new norms also inter-politicizes the discussions and controversies over specific cases. But this attempt inevitably opens new breaches and incompletenesses, which may sometimes reveal themselves to be deeper than what they were previously. A complementary normative work therefore aims at according the subjectivities through homogenization, so to avoid that actors ‘misinterpret’ the norms in ways that may be understood by the others as being subjective, as being attributable to mistakes or ill-intentioned. The ultimate resource for the people doing evaluation is considered to be their expertise, consisting in particular in their training and their experience, which allow them to assess new elements on the basis of what they already saw. Finally, and regardless of their origins, when the forms of reasoning on proofs are perceived as being corrupted by some actors, they then may be labelled as either wrong or subjective.

Interestingly, Chateauraynaud and Debaz consider that their categories are close to the three regimes of objectivity of Daston & Galison described above, and which could therefore let appear by contrast three regimes of subjectivity, corresponding to the subversion by one regime of the others. Moreover, those three regimes can be put as well into correspondence with the typology of Graeber (2001) relative to the types of comparisons through which value emerge, and which are therefore three types of processes of valuation: moral, semiotic and economic comparisons. This can for example be the reconfiguration of the forms of reasoning through the hold of the axiomatic system over the experience and the conventions, through its depiction of its value as a moral ideal of objectivity. But the fragility and incompleteness of this system can also lead to reinforcing conventions, and to forge between actors new conventions of equivalency, therefore referring their value in economic terms. Nonetheless, their uncertainties themselves allow the resurgence of the primacy of the experience and its irreducibility, therefore relating to the semiotic value of the proof and finally leading to the development of controversies and claims that dominant axioms and conventions have to be revised.

The uncertainties due to the unavoidable incompleteness of normative repertoires, conventions and axioms, as well as their always imperfect and unachieved diffusion and therefore hegemony, disrupt the seemingly coherent articulations between regimes of evidence that the actors may consider acceptable to operate demonstrations. Those disruptions are then pointed out by referring to a particular type of “subjectivity” that a specific actor (whether employees of the environmental authority, of the company, or members of local communities impacted by a project) is showing through the descriptions that they make of the knowledge relations between the context, the norms and the data relative to a particular project or event. A particular attention is then given to the criteria put forward, and their valuation focuses in particular on their quality and scope (easy, minimum, basic, optimum), their origin (legitimacy, arbitrariness), their flexibility or strictness (in relation to the clarity of their definition) and their variability (uniqueness relative to others, temporal stability, specificity and novelty).

Finally, the articulation of the regimes of subjectivity let appear distinct forms of morality relative to a tolerance toward specific regimes of subjectivity and their possible articulation. Those coincide with the regimes of engagements described by Laura Centemeri (2017), which relate to the valuation of their appropriateness according to the type of good pursued, whether utilitarian (interests), conventional (common good), or relative to specific attachments (the matters of concern). Correspondingly, actors do not seem to only try to produce the most stable facts, but also to articulate this production with the valuation of the relation between specific facts and their demonstration through specific forms of reasoning based on proofs, that is the valuation of the degree of articulation or disarticulation of the epistemological and axiological plans.

7.5 Political intrusions

While the evaluation process, the functioning of the ANLA and the work of its employees depend on the close articulation of constraints of diverse types, during the interviews that I did with them, some employees also occasionally mentioned the pressure that the institution and its employees were receiving, and the impacts it had on the licensing process. While the examples taken were almost never specific, they were illustrating ways through which decisions may be influenced by the government or the pressure exerted by other actors, including companies and local politicians or communities, directly or through the media, and which were then spread within the institution. For example, it was already mentioned above the possibility of what had been referred to as a kind of institutional ‘voluntarism’, which was translated into a demand to the employees for lowering the strength of compliance with (or the degree of ‘attention’ toward) certain regulatory aspects considered to impede or slow down desired outcomes.

In general, it was considered that the bigger the project, the more the position of the State mattered, and the bigger the social impacts the clearer this position had to be so that the ANLA may licence a project which wouldn’t be otherwise, because of a shift from a responsibility based on a technical decision to a responsibility based on a political decision. But the frontier between the two is rarely clear, and while some employees of the ANLA considered that some decisions should be more explicitly political, the government may try on the contrary to make itself some grasps allowing it to push the responsibility of the decisions on the environmental authority, for example by expressing that the licensing of the ANLA is the guarantee that impacts were objectively evaluated:

Es mejor decirles [que va a tener impactos]. Es una decisión, permitimos para que generemos energía que necesita la gente, para calidad de vida de la gente, para el desarrollo del país, o le decimos “no” y no tenemos eso. Si le decimos “Si” para tener eso, pues ¿cuál es la afectación? Oiga: se pierden unos peces ¡y la gente pide eso! Entonces la compensación, ¿cómo es? (...) En Colombia ha sido como costumbre que si se permite la hidroeléctrica, se acepta de entrada que vamos a tener afectaciones, un impacto grande, pero se debe compensar. (ANLA15)

When the impacts were of diverse and implicated various actors and institutions (like when the project was on indigenous land or a protected area), an ANLA employee told me that, “in this case, the discussions that take place are much broader”* (ANLA1) in terms of scope and of the people or institutions involved. In this case, it was considered that the difficulty for the institution was not to go beyond its competences (for example by authorizing an activity in a place where other actors had a say without making sure they agreed). Indeed, the problem was that political decisions regarding projects then would have to be validated in ways

incongruent with the status of an institution which can theoretically only evaluate impacts and their management and compensations, but cannot put those in perspective with their political motives or the democratic aspect of the decision.

This ambiguity also lies in the position of the ANLA with regard to the Ministry of the Environment, since it is somewhat external but not independent from it (and, as mentioned, situated in the same building as the Ministry). Moreover, since the licences were considered to be a sensitive matter because of the social conflicts it could generate and its relation to the development of the country, it was closely monitored by the Ministry, raising the question of the nature of the decisions taken.

For one person working with the ministry of the environment that I've interviewed, the reason, making that the environmental authority wasn't rejecting some licences as it sometimes should, was that the institution wasn't corruption- and politics-proof:

La autoridad ambiental no debería otorgar licencias ambientales en ciertos tipos de e debería decir simplemente: "no, no otorgó la licencia ambiental por esta y esta razón". Lo que pasa es que empiezan a permearse otras cosas de corrupción, de decisiones políticas, que permean la misma herramienta. Pero digamos que ahorita eso está en el ojo del huracán como se dice porque, ahorita hay mucho control sobre ese tipo de decisiones y hay mucha defensa de las comunidades, que es algo que ha nutrido mucho o que ha cohibido mucho la autoridad ambiental de otorgar licencias. (TNC3)

According to this description, the decisions of the environmental authority are not so much related to the bare application of the norm but expressing the balance of power resulting from the diverse power of expression of the actors and their eventual coercitive capability, so that the pressure that their expression causes may become felt and diffused through the institution by its employees according to their position in the hierarchy.

Similarly to the way companies were said to request meetings with evaluators of the ANLA to put pressure on them, local politicians coming at the ANLA to make their views known were also seen as trying to influence the evaluation or the process. Before one of such meetings between the mayor of a small town and people of the compensation group and that I've been able to observe, the employees who would receive him agreed that the best strategy was to limit themselves to listen and say the least possible. Indeed, they were considering that everything that would be said can be used against them or the ANLA, since the mayor could take advantage of any guarantee or agreement expressed orally in the event of a subsequent decision that contradicts it.

They also had the idea that the only answer that this mayor, who was coming for advocating the approval a specific project, wanted to hear was: "yes, we are going to authorize the project, on such and such a date", and that he wouldn't want to listen to any negative answer, and even less to the technical, procedural or legal arguments supporting this rejection. Since local elections were close, they also speculated that the mayor was hoping for a positive decision from the ANLA on the requested licence, so that he could put it forward during his campaign, regardless of whether his visit had any actual impact on the decision. This puts emphasis on the fact that not only a political influence, understood broadly, can be hoped to be exercised on the decisions of the ANLA, but that a subsequent political use can be made of the decisions and their association with some actors. This understanding of politics therefore goes beyond the practical politics of classifying and standardizing described by Bowker and Leigh Star (2000), and which focuses on the design of those systems and on the choices regarding what will be visible or invisible, in ways similar to the descriptions made in this

and previous chapters of this dissertation, and relate more to direct attempts to influence the outcome of specific projects.

In some occasions, employees of the ANLA also showed that they were conscious of the fact that the actions of the institution were under scrutiny and that the decisions that were taken for the most difficult projects would be commented in the newspapers. This was implying that they should therefore be particularly careful in their decisions, in particular so not to generate “expectations” which would then be difficult to handle in they weren’t fulfilled. During situations of crisis, the level of urgency of some decisions was also considered with regard to their capacity to ‘lower the pressure’ on the institution, a lowering of the pressure which was seemingly mostly possible through quick ‘social’ measures.

One person of the compensation group also mentioned the difficulties created by the discrepancy between the media temporality and the one of the institution, and that both had to be taken into account. This can be put in perspective with the often-noted discrepancy in biodiversity offsets between temporalities of impacts and temporalities of compensations: in both cases, the hegemony of the space of calculation is threatened by its confrontation to other processes and the milieux in interaction.

Similarly to the way the institution is subjected to contradictory demands, employees may face moral dilemmas that are not related to the environmental consequences of a given project but to a tension between their loyalty to their employer and the personal risks they may face to accept to follow their employer’s demands when those were contradicting their own evaluation:

Lo que pasa es que, pues la ANLA es un organismo nacional, del estado y usted sabe que hay cosas que el ANLA muchas veces puede estar fallando, ¿no?, por problemas políticos. Hay presiones políticas donde la ANLA tiene que dar cosas que de pronto no se puedan dar, pero hay que hacerlo, son cosas del estado. (...) Con unos grupos se ha dado, que han dicho: “mire, tiene que hacer esto” y el grupo dice: “yo no”. yo conceptué de que ese proyecto no va, y les dijeron: “tiene que ir”, y mucha gente ha tenido que irse del ANLA por eso. (...) Allá hay presiones políticas como en todo país, y como en toda parte, la presión política es jodida, pero si usted dice: “yo no voy a dar esa licencia”, es mejor decir: “no” y después no verse metido en problemas ¿sí? Entonces por eso han sacado gente. (ANLA6)

The existence of this type of pressure inciting employees to revise their judgement was also corroborated by another expert of the ANLA that I’ve interviewed, and they said that it was stronger when the project was of public or national interest. Nonetheless, they explained that it was not formulated as: “this project cannot be rejected”, even if it was the meaning, but that, if they were not modifying their decision, their analysis, the way they chose their criteria and ultimately their ‘skills’ would be questioned. The pressure was therefore not explicit but, in the cases it had to be quite direct, it relied on telling the evaluators that doing their job well was to take the right criteria, that is some which would allow them to not be too hard on the company. The same person said that it could be difficult at the psychological level, because they either had the impression that they didn’t do their job well, or that it was their manager who wasn’t doing it well but was imposing their “point of view”. In both cases, the precariousness of the employment at the ANLA rendered the situation more wicked.

Finally, while the evaluations made by the ANLA were often described as being under the risk of subjective interpretations and valuations, because of the lack of training or the activism of some employees, their variability and their sometimes questioned relation to the norm can also come from institutional policies as well as relate to the pressures that may originate from a variety of actors, including from the government itself. Those pressures may have impacts on the imagination of the employees, on their diligence, on their will

or capacity to deviate from top-down instructions, on their confidence over their technical capacity or over their job security, all of which are ways through which aspects of an evaluation may be altered.

7.6 Conclusion

The last two chapters described the ongoing reconfigurations of knowledge relative to what the compensations are or should be, and how it translates into specific criteria for evaluating information which type and qualities depend on the role this information is considered to play in specific moments within the process of evaluation. Indeed, at each stage of the licensing process actors aim at gaining an understanding about ‘what is’ through the production of information in the form of data which may itself be evaluated through different criteria of quality, and valued according to the distinctions they allow making and their relation to ontological and ethical preoccupations.

The analyses often went beyond what limited concerns compensations, not only because they are embedded in the larger EIA process but also because numerous observations on other but related issues were also informing the way impacts were understood and information produced and assessed. In this complex dispositif within the compensations ought to be set, the observations showed the great confusion in which most actors are with regard to the practical meaning and implications of the compensations. While numerous precisions in the forms of concepts or methods are always added, they seemed to never be quite able to resolve the incertitudes inherent to an instrument which axiomatic is constantly at risk of detaching itself from the other ways of perceiving the tangible. Therefore, actors concerned with their relation with concrete practices and results have to do a sustained work to avoid their disconnection from the reality of the territories in which they aim to “land” them. Indeed, the ‘instrument’, as was often called the biodiversity offset norm, itself embeds contradictory aims of saving diversity by representing it simplistically, and involves a number of demonstrations that work at a given level of abstraction but become quite bewildering in practical cases. The troubles encountered by actors in the undertaking of the task they have to perform may therefore be intrinsically unresolvable. The contradiction actually lies in the aim at territorializing, in a literal understanding of its definition given by Deleuze and Guattari who were considering this process as a reciprocal appropriation process of objective milieux with individual and collective subjective investments of these milieux (Dewsbury 2011), by using a tool which is intrinsically one of deterritorialization, that is of impeachment of this process.

The resulting confusion and difficulties encountered by actors trying to understand what it means to have to articulate the theoretical framework with the practice of biodiversity offsetting lead to the emergence of strategies and internal policies to overcome them, as well as the retraction to safe analytical perimeters. In particular, it was described how the relation between theory and practice is mediated by what actors consider to be technical capabilities and how it relies on both an active circulation of knowledge and a constant normative work consisting in the production and circulation of formal and informal norms as well as of concepts along with the percepts and precepts actors attach to them. It also showed that the normative work as well as the experiences of the actors get overwhelmed by epistemological, ontological and axiological difficulties, forcing them to a constant reinterpretation and revaluation of their potential strategies of evaluation.

On various occasions, it was shown that ideas of certain types of ecosystems, whether considered pristine or not, are understood in diverse ways depending on the lens through which they are examined. Indeed, a change of approach can put forward certain qualities as well as allowing their articulation with meaningful elements of 'context'. As such, their 'intrinsic' properties are never enough to value them, but that they always have to be related, compared or contrasted with other issues and preoccupations, whether procedural, ecological or ethical.

The descriptions also showed the interplay of distinct knowledge focuses, and the related facts that are thus valued through these focuses: professional knowledge, that is the trained judgement; knowledge about the norms, their limitations as well as the right normative and conceptual interpretations, including making the difference between what should be considered objective or subjective; and knowledge about the process and the type and quality of the information required at each stage and about the ways it should be evaluated in theory and the practical ways to do it in practice, including the tricks of the trade necessary to overcome 'technical' difficulties and the contradictions. Therefore, different types of articulations form the modes of valuations of particular ecological, conceptual or normative features, and of the actions of certain actants (whether institutions, instruments, local actors or components of the biodiversity).

Beyond the legal and technical norms are also informal norms regulating their uses and interpretations. These form a normative repertoire made of concepts and procedures regulated in part by guidelines produced by the institution but which also come from the scientific research. The "justifications" that they allow, as the actors insist that the propositions must be accompanied by justifications, must therefore fit within their frame of validity. Through their normative work, actors aim at delimiting the frontiers of acceptable technical justifications, at stabilizing the spaces of calculation within they have to evaluate the informations, as well as reducing the extension of what they consider to be subjective appreciations. As those frontiers get tested and redefined, they also reveal the ways through which the norm is interpreted, and how both the degrees of freedom and of constraint it seemingly imposes are assessed and stretched by the actors according to their valuation of the situation, leading to the consideration of preoccupations, interests or political motives.

Around the shared constraint of the norm, and by playing on its flexibilities or rigidities, the actors take part into processes of holds and de-holds in relation to the degrees of freedom that can be gained and the degrees of constraint that can be imposed on the other. But, as the norm creates a hold over the actors and the process from which it is not always possible to escape and that may sometimes create suffering, it may also allow the actors to make themselves some grasps to defend their positions. Indeed, EIAs are also giving a foothold to actors fighting against projects, allowing them to challenge both the evaluations on their own terms as well as the very terms proposed to make the evaluations. Nonetheless, while the production of grasps based on the norm can have the purpose of giving oneself freedom, sticking as much as possible to the norm can also allow putting the process under its total hold. In the latter case, this voluntary non-freedom isn't necessarily seen as problematic but can be understood, at least theoretically, as just, since it allows the employees to be loyal to their function and the citizens to the law.

When the compensations and the norm regulating them have to land in the different milieux, norms can be seen as both a constraining instrument exerting their hold over them, encountering resistance and generating frictions and intra-actions, transforming how are perceived both the compensations and the milieux. But the transformations of their associated normative repertoires can generate new possibilities for actors to make themselves some grasps over processes or other actors. For example, while the norm provides a frame for

developing new legal or technical arguments for the ANLA to impose compensations, they can also be the basis for companies to contest certain decisions and for local communities to put forward their demands.

The capacity of production of a certain truth about impacts implies the power to define their compensability and the specific compensations that should make up for the impacts pointed out. The challenge for the actors is to interpret particular forms of knowledge so to form meaningful understandings, while avoiding at the same time giving in to possible critical qualifications of subjectivity. Their goal is therefore to make appear their understandings as the truth, that is as being a legitimate statement within the milieu over which the dispositif aims to extend its hegemony and thus have in effect the power to keep them under control. Conversely, the discredit that a qualification of subjectivity entails can serve as loosening the possible grip that the targeted interpretations may gain otherwise, that is if their truth value was accepted. Nonetheless, while truth is associated with power, it can also remain intangible when the articulation between the different regimes is deficient. Indeed, even if a no net loss of biodiversity can be demonstrated according to the offsets' axiomatic, and thus accepted as 'real' inasmuch as the axiomatic is real, its connection to the experience of the actors and the nature of its practical consequences may not be as easily agreed on.

CHAPTER 8

Biodiversity impacts and compensation scales: conjurations, articulations and contestations

8.1 Introduction

The global emergence of the use of Biodiversity Offsetting instruments, which relevance and effectiveness to protect biodiversity are broadly discussed, allows studying how the conceived impacts that a given project has on biodiversity are said they should be compensated, and thus also how the impacts, whether positive or negative, are conceived in the first place. The relation between the definition of the nature of what is impacted and the extent of the impacts and compensations is central in the environmental impact assessments. This emphasis on issues of extension suggests that the manipulation of scales have a very crucial role within this process.

For example, Fischer (2003) considered imperative to elaborate scales which would allow a sociological measurement of disasters. His idea is that a disaster scale “should assess the degree or extent to which this everyday social activity is disrupted resulting in temporary or permanent changes in the social structure within a community, primarily, as well as for the larger society, by extension”. While this scale should be more conceptual than quantitative, he nonetheless called for taking into account the degree of disruption in terms of scale, scope and duration, which for him refer to severity, widespreadness and time of recovery¹⁷⁸. The concept of scale can also help understand core concepts of the environmental impact assessments, which are the mitigation hierarchy and the delimitation of areas of influence, especially when considering them as scale-making projects.

This chapter starts from the hypothesis that in these processes not only scales and scaling play a crucial role, but that the process of construction of scales is actually indistinguishable from the process of perceiving

¹⁷⁸ The meaning of the 'scale' of the 'disaster scale' is therefore different than the one of the 'scale' part of this scale, but this is a common abuse of language of the term scale, term that I also use in this chapter to aggregate the simultaneous consideration of multiple dimensions.

impacts and assigning compensations. Indeed, while the definition of ‘facts’ directly relates to the valuation of impact and compensation, in turn those facts entirely depend on the scales of observation and operation, as well as a variety of other processes and analyses that enter in their establishment and stabilization. Using as an analytical tool the concept of scales, the main questions that are at the basis of this chapter are the following: what are the different types of scales that are used in the context of EIAs, what the relations between them are, how they are defined, by who, and how they are used.

Scales manipulations are also the means of strategies and politics that are not new in the domain of environmental impacts and have profound implications when looking at them from an environmental justice point of view. As recounted Martinez-Alier (2002), the ‘chimney war’ which took place in Germany in the mid 19th century was already about countering the contestation against sulphur dioxide pollution. By raising the height of the factories chimneys, the factory owners wanted “to disperse the pollution over a larger territory where, it was hoped, it would be mixed up with the pollution from other factories, thus evading responsibility in judicial cases which required cause-and-effect proof of the source of the damage”. Size of the chimneys were therefore articulated with diffusion models and modes of attribution of responsibility, showing that the articulation of various scales have to do with processes of visibilization and invisibilization, as well as of internalization and externalization, shifting both the existence of facts and their causal relations to other ones.

In the context of the Environmental Impact Assessment (EIA) that is required to obtain the licence for a project in Colombia, the ways those impacts on biodiversity (and more generally on the ‘biotic component’) are defined can be put in perspective with the ways other impacts (that relates to physical and social “components”) are taken into account according to the EIA normative guidelines. An important step for producing an EIA is to characterize the areas of influence of the proposed project, depending on the identified impacts for the three “components”, and then propose a way to mitigate or compensate them. Thus, in EIAs and the related concepts of mitigation hierarchy and of compensations, the interrogations often revolve around the scales through which impacts should be assessed and compensated. Indeed, the choice of the right scale of analysis and scale of action are often considered of the utmost importance, possibly determining the success of a process and relating to a capacity of understanding well or correctly a particular issue (or to problematize it in a meaningful way). Similarly, ideas of transformations or of stability wholly depend on the scale that is considered, and therefore any statement which claims one thing or the other should be carefully examined to reveal the scales that it relies upon. This chapter thus focuses on the ways scales come into being and their relations with knowledge and valuation, by taking as examples offsetting scales and “areas of influence” as frontiers of impact evaluations and the implementation of the mitigation hierarchy.

As we will see, this relation between the definition of ontological and scale frontiers is exemplified by the definitions of the scale of impacts and of the prioritization of the steps of the mitigation hierarchy. This is the case for projects of various types as well as in the discussions and disputes about the degree of necessary climate mitigation versus the expected shift over the years to discourses and actions focusing more and more on adaptation. Indeed, EIAs provide specific definitions of the scale that will delimit the impacts, and how they will therefore have to be compensated, in a balanced way filled with peculiar subtleties, so to reach “sustainability”. This makes it possible to observe the relationship between particular environmental objectives and technical instruments that are themselves governed by a particular normativity. This chapter will thus show, on the basis of the analysis of arguments that are used by different actors to frame the impacts of a given project and how they should be compensated, that the definition of the impacts, the areas of influence and the

appropriate compensation measures are neither objective nor consensual, and that experiences of actors of the limits and the connections between actions, impacts and compensations difficultly fit technomanagerial definitions.

The analysis presented in this chapter continues building on the ethnography that I carried out within the Colombian national environmental authority, complemented by interviews, observations at the site of the projects studied and analyses of the grey literature related to these projects and official documents governing impact studies and offsets.

8.2 Linking global, regional and local biodiversity

It is important to note the ways actors articulate global contexts and issues, such as the Anthropocene, the climate change or biodiversity crisis, with situated events and conditions, and specific visions of the future, including varying levels of determination and ethics relative to the choices to be made. Indeed, the opening of alternative futures cannot be achieved without questioning the existing overarching narratives which are the supposed matrix of all coming events.

We can take as an example the recent reports describing a catastrophic and degrading state of biodiversity, and which were projecting quite a gloomy future. The most widely known is the global biodiversity assessment published by the IPBES in 2019 (IPBES 2019a) and for which the media coverage insisted on the most shocking and clearest data, which was the fact that about one million species were threatened by extinction. But assessments of biodiversity have to take into account its complexity, which poses in return problems of communication. This was well illustrated by interesting news feature written by Gayathri Vaidyanathan published in August 2021 by Nature, and titled *The world's species are playing musical chairs: how will it end?* (Vaidyanathan 2021), described recent studies (Danneyrolles et al. 2021; Leung et al. 2020; Svenningsen et al. 2020) which showed that the global trend portraying a biodiversity decline (like the flying insect biomass decline shown by Hallmann et al. 2017) was often not observed locally, therefore nuancing the announced global collapse. Indeed, as researchers investigated particular regions, to their surprise in some places the species diversity was rising. According to one researcher that they quote, “there should be some caution about using these really broad-based global metrics, even though they are pretty powerful statements. But they can mask a whole lot of variation and be driven by extreme outliers”. Another expressed that “ecosystems don’t work at the global scale”, and that they were more “interested in what is happening to biodiversity at the local scale, because that’s the scale that we experience”.

One of the studies the article discusses focused on “scale-dependent changes in tree diversity” (Danneyrolles et al. 2021) and showed that disturbances led to both increased diversity within landscapes and homogenization at the regional scale. They were thus concluding that their “results support the idea that human-induced impacts on biodiversity are strongly scale-dependent and not necessarily associated with biodiversity loss”. Another study considered that “the distillation of many trends into a global mean index obscures the variation that can inform conservation measures and can be sensitive to analytical decisions”, and that the value of the global indicator was driven by extreme (declining) outliers (Leung et al. 2020). As I recalled in the first chapter of this dissertation, there are numerous difficulties with the concept of biodiversity and especially with regard to the metrics that should best represent it. Thus, depending on the types of dynamics

that are considered the most relevant and the scales of study, the resulting picture can often greatly differ. In this regard, time scales are also determinant, since the same number of species extinction, for example, had to be interpreted very differently if it occurs over a year, a century or a million years.

Interestingly, the article by Vaidyanathan mentions that a paper written by Vellend et al. (2013), and which also contrasted the global decline narrative, was first rejected by Nature. It seems that some reviewers worried that journalists may use it to downplay biodiversity issues, while the researchers explain that their integrity has even been questioned. This shows the strong perceived connection between knowledge production and communication, visions of the future and moral implications regarding the type of actions required to be undertaken.

The cautiousness in the reception of the studies challenging the idea of an homogenous biodiversity loss seems to make sense for actors afraid that their call for a stronger protection of the biodiversity might become weaker. At the same time, biodiversity facts and issues in all their complexity, at the different scales and in a variety of public arenas are at the centre of controversies and are often contested. For example, the IPBES had published on their website a response to controversies around the “one million threatened species” figure, including apparently wide critics of their models being just “electrons on a hard drive¹⁷⁹”.

The problem that is often put forward by researchers is how to do justice to the complexity of some issues without impeding action by confusing their audience over the nature of the problem or by blurring the criteria of morality of the action to be taken to “solve” the problem, which leads them to sometimes be in the ambiguous situation of having to defend the factuality of the potential extinction of one million species.

The preceding remarks invite to point out a few difficulties relative to the use of global assessments and statements, and that will be further developed in this chapter through other examples.

Firstly, the analysis of the biodiversity decline is highly sensitive to geographic and temporal scales. Nonetheless, and as we will further see, the problem isn't just about choosing one scale over another, but about understanding the specificities of issues at their different scales (or conversely to be able to consider different events involving different scales as being related in some ways).

Secondly, there is also a persistent tradeoff between drowning in too high levels of detail and erasing local differences by generating averages and global pictures. Indeed, when considering global impacts at anything smaller than a geological scale, observed events can only be described in terms of radical transformation or statistical deviation, which is often problematic when trying to integrate them in decision-making processes.

Thirdly, the envisioned potentialities for a change of trajectory largely differ between the physical models which assume a strong inertia and socio-political theories of change which may consider that change can happen quickly and in unpredictable ways. Controversies therefore also emerge with regard to the type of changes that are actually possible (or still possible in the case of the Anthropocene or a potential collapse), and models can also be revised to open new potentialities. For example, the 2021 IPCC report (IPCC 2021) seemingly aimed at restoring hope that, despite a degrading panorama, changes in our emission patterns could have a relatively quick relieving impact, contrarily to what was thought before.

¹⁷⁹ A million threatened species? Thirteen questions and answers, Dr. Andy Purvis, June 2019, IPBES news. <https://ipbes.net/news/million-threatened-species-thirteen-questions-answers>

Fourthly, not all changes are progressive and some rapid transformations are considered to potentially happen abruptly when crossing certain turning or tipping points, which can be seen as moments of bifurcations and changes of temporality. Moreover, non-linearity applies not only to temporal scales but also to transformations along other types of scales, like the famous example of the butterfly effect or as was shown through the metrological controversies on the effect of low doses (contesting the adage from the 16th century toxicologist Paracelsus which expressed that “the dose makes the poison”) as well as on endocrine disruptors (see for example Chateauraynaud, Debaz, and Fintz 2013). Following the idea of ‘planetary boundaries’, to which they relate, tipping points became more and more crucial in the analysis of the potential transformations of the climate (a well-known example being the possibilities of “collapse” of the gulf stream) as well as of the biodiversity (in particular with regard to the deforestation of the Amazon), and the notion of social tipping points is now emerging. For example, researchers looked into ways for “tipping positive change” (Lenton 2020), while a recent joint workshop by the IPBES and the IPCC reunited scientists to try to understand how the climate, biodiversity and society, including their specific tipping points, were interacting (Pandit et al. 2021). Another issue is that, when interpreting a series of events and their meaning for the future, the classical dilemma lies in the opposition between views proclaiming that they are the produce of long-term trajectories and others which stress their singularity and the non-linear characteristics of the bifurcation they represent.

Since biodiversity points not only toward specific elements but also to their “diversity”, and that it therefore involves taking into account the relation between the elements considered, it is from the start a concept wholly depending on the definition of scales for these considerations. Moreover, while biodiversity also has multiple dimensions, it is acknowledged that it is virtually impossible to study them all at all scales, and it is thus crucial to understand the strengths and limitations of each of the dimensions and scales, and to determine which ones are the best predictors of the state and changes in ecosystems (Isbell et al. 2017).

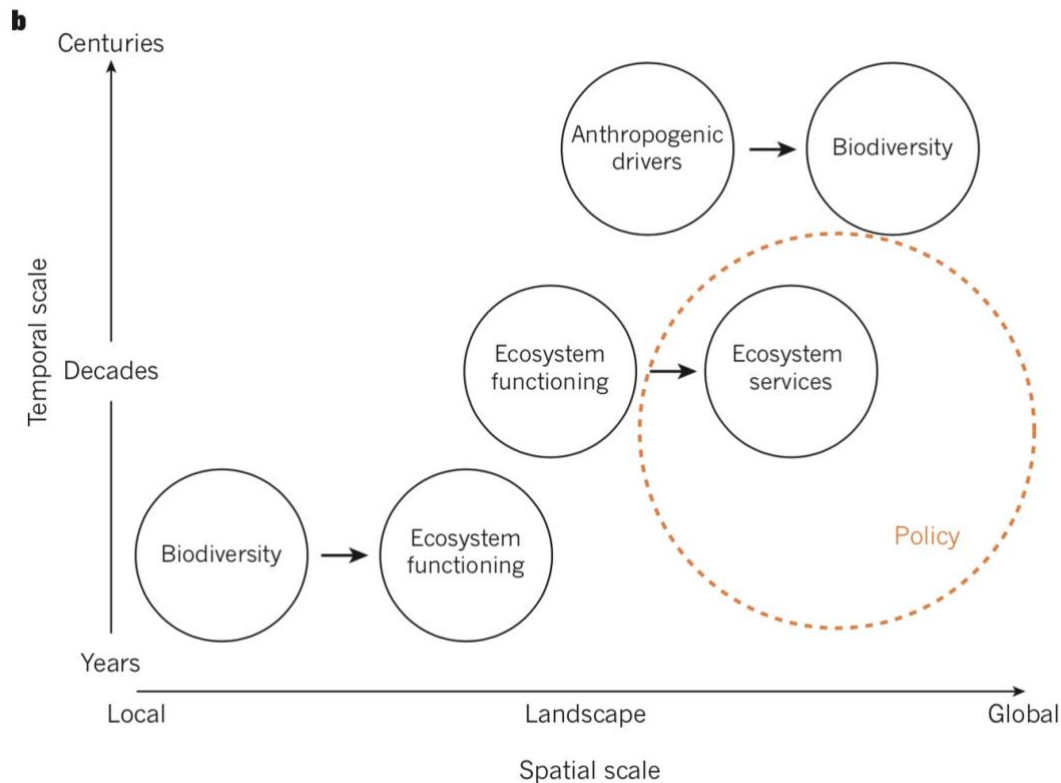
Besides the scale problems intrinsically linked to the concept of biodiversity, other fundamental issues emerge when trying to understand the relations between humans and biodiversity at different geographical and temporal scales. The paper “Linking the influence and dependence of people on biodiversity across scales” (Isbell et al. 2017), written by ecologists which participate in good part to the IPBES, is based on the assumption that the effects of human activities on biodiversity “depend strongly” (one could wonder why they chose to use the term strongly and not absolutely) on the temporal and spatial scales being considered.

The authors wanted to understand how global trends play out at local levels, considering first that “linking the impacts and dependence of people on biodiversity will require scaling down from long-term global extinction trends to under-explored contemporary trends in local and regional biodiversity”. Indeed, they consider that the relation between the two isn’t clear since, interestingly, while global rates of extinction can appear to be lower than local ones, because species can become extinct in one area while surviving elsewhere, net losses are on the contrary expected to be higher at a global scale than locally, showing a contradictory relation between scales and indicators. At the same time, they also stated that the relation between biodiversity loss and the diminution of ecosystem services is particularly strong “at the large temporal and spatial scales that are most relevant for policy and conservation”, scales at which they consider difficult “to predict the extent to which human-driven changes in biodiversity will alter ecosystem services”.

They therefore considered that the problem is that the scales “at which knowledge is available” are not aligned with the scales “at which policies and other decisions are often made” (it is not clear whether they talk

about all policies or the ones that most relate to the policies taken at the level that the IPBES ought to influence), and describe the issue with a figure which is reproduced below (see Figure 38).

Figure 38: Reproduction of the Figure 1b of the paper “Linking the influence and dependence of people on biodiversity across scales” (Isbell et al. 2017).



The figure positions three relationships of the “socio-ecological system” expressing the influence and dependence of people on biodiversity on a diagram with two dimensions representing temporal and spatial scales. What is particularly striking is that ‘biodiversity is represented twice, since the links they want to depict involve the representation of biodiversity as an element which is both ‘local short-term’ (when considering the dependence) and ‘global long-term’ (when considering the anthropogenic influence), but that it is not clear how the two get linked and understood as a unique feature, instead of appearing as being actually two separate concepts, since the scales through which they are perceived makes them so radically distinct.

The problem is that, while the biodiversity is better known at local levels, the trends are easier to predict or grasp at wider scales which are formed by the aggregation of local data, and that those larger trends are then difficult to translate again in the prediction of local dynamics. These difficulties make the author consider that “there are mismatches in the spatial and temporal scales at which the relationships between anthropogenic drivers, biodiversity, ecosystem functioning and ecosystem services are best understood. This makes it a challenge to link the cascading effects of human activities on biodiversity, ecosystems and ecosystem services.”

With regard to the production of biodiversity knowledge, they also make the interesting comment that observational and experimental studies do not allow assessing biodiversity relationships at the same scales. Indeed, they say that while observations can allow tracking undergoing changes at large scales and to include

a realistic system complexity, experiments can give information on the consequences of potential future local conditions and help disentangle the role of each mechanism and driver.

8.3 Definitions, properties and ontologies of scales

The effects of certain activities may be assessed in an absolute way according to a particular measurement scale, but their actual impact is always a matter of considering them relatively and relationally through varying scales so to include meaningful elements of context. Thus, the ‘same’ impacts can be seen, perceived or described differently depending on who is impacted, where the impacts occur, their extension, their reasons, and on any other contextual element that actors may want to involve in their valuation articulating and constructing jointly the facts and the preoccupations associated with those facts.

Gibson et al. (2000) identified four main issues with scales, including how it affects the identification of patterns, the processes of generalization and of optimization, and finally how the choice of different levels on a scale affect the explanation of social phenomena. On this last issue, they express that “making causal statements about particular patterns, however, explicitly or implicitly invoke a scale and level”. While the patterns may appear to differ depending on the level of observation, actually not all levels and the patterns they allow perceiving are equally meaningful depending on the questions (and preoccupations) which guide the analysis. Indeed, scales define the relevant context for understanding particular phenomena, which thus become defined through their context. Indeed, for Lahire, the choice of the most relevant context produces the most relevant ‘knowledge effects’ (in Boulay 2019; Lahire 1996), nonetheless what is the most “relevant” for some actors may not be for others, and this relevance quality of the context can on the contrary be quite controversial. Indeed, shifting the scale implies shifting the context, as well as transforming the phenomena themselves and the facts that can characterize it. The relations, whether historical or anthropological, between contexts and facts or practices are thus not fixed but processual, that is that none is static relatively to the other but that they are codependent. This dependence may in turn be subject to discussions and attempts of hegemonic impositions.

Gibson, Ostrom and Ahn (2000) define ‘scale’ as the spatial, temporal, quantitative, or analytical dimensions used to measure and study any phenomenon, ‘extent’ as the size of the spatial, temporal, quantitative, or analytical dimensions of a scale, ‘resolution’ or ‘grain’ as the precision used in measurement and ‘levels’ as the units of analysis that are located at different positions on a scale and which can be hierarchical or not.

Similarly to the issues described before, results of an analysis may radically differ according to the scale, resolution and thresholds used to gather and process the data, and this is particularly true when a global phenomenon can have varying local effects or that local events may have international repercussions (Boulay 2019). The unpredictability of cross-scale effects can therefore go both ways along the level ladders. Nonetheless, in many cases, what is aimed to be represented and the ‘scale’ used cannot be dissociated, and actually what are called the mesh and the thresholds are intrinsically linked to the definition of scales and the relations it ought to help describe or brought into being and perceiving.

The question of scale is also crucial in the definition of tipping points and irreversibilities since they relate to the definition of thresholds, which existence can only be defined and is only relevant at certain scales.

Therefore changing scales changes what will be considered as an either meaningful transformation or as a 'normal' phenomenon. The difficulty becomes even greater is that one tipping point can cause cascading tipping points effects, or can interact across different geographic and temporal scales.

Shifting scales is also what can allow perceiving what became called as "imported deforestation" or "imported emissions", or as the "climate debt" of rich countries as historic carbon emitters if the shift is temporal, or also to study "telecoupling" and spillover effects, concepts which both disrupt usual ideas of distance through the reconnection and bring closer in terms of dependency and causality events that may be spatially distant or previously considered unlinked. Telecoupling relationships are defined in particular by "the externalities and unintended consequences of social and ecological processes which occur in distant locations, and the feedback mechanisms that lead to new institutional developments and governance arrangements" (Eakin et al. 2014). Some articles using this framework put forward the fact that we now live "in a telecoupled world" (Friis and Nielsen 2017; see for example Liu et al. 2013). For those trying to analyse telecoupling, a "key challenge is about defining system boundaries" (Friis and Nielsen 2017). But this the challenge is thus also the definition of units, because considering exchanges between two countries invisibilize the actual individuals or groups emitting or receiving in the countries (who are the bearers and beneficiaries of the exchanges). On the contrary, putting forward those individuals or groups could minimize the responsibilities of countries themselves through their State policies, for example.

Another concept that can be useful to understand why actors and dispositions can struggle in their practical activities to link actions and procedures which were conceived or were aimed to be used at different scales in the one of scale mismatch (Lee 1993). Used to distinguish between actions that sometimes have opposed impacts depending on scale, issues of scale mismatch were for example studied with regard to sustainability (Lee 1993), to the management of urban landscapes (Borgström et al. 2006) and is often invoked with regard to the relation between ecological processes and agricultural management (see Pelosi, Goulard, and Balent 2010 for a literature review), or in social-ecological systems (G. S. Cumming, D. H. M. Cumming, and Redman 2006).

In the typology relative to ecological issues proposed by Lee (1993), the mismatching scales considered are usually spatial, temporal or functional. Those can relate to a variety of ecological or social processes, like the growth, reproduction or displacement of flora, fauna or the design and implementation of projects, policies, or the type of knowledge produced. Closer to the current analysis, Bigard (2018) wrote a thesis on the mitigation hierarchy in which she asked whether its implementation could help reduce impacts on biodiversity. Considering the mitigation hierarchy as an intermingling of the spatial and temporal and functional scales, she wanted to demonstrate whether the problems of the mitigation hierarchy could originate in the mismatch of scales interacting during its application. Nonetheless, this concept of scale mismatch seems to often take scales as being preexistent to the problem which is looked at, and therefore downplay the role of actors in their construction and transformation, as well as the performativity and intentionality of their scale-making projects (Tsing 2005). The other problem is that they only consider "mismatch" between scales of different types, and not problems of scalability, of non-linearity and of ontological transformations along the levels of a given scale. Finally, the scales used (like the administrative scale or the 'ecological' scale) are seemingly too often considered to exist independently of the type of administrative or ecological process that is said to operate at their scales, while scales can only exist in relation to a particular object scaled, regardless of the type of world to which they are said to pertain.

Ontologically, a scale is never totally independent. A scale is always linked to, or embeds, directly or indirectly, a number of other quantitative or qualitative scales allowing to measure, describe, hierarchize or compare the elements to which the scale relates, and the isolation of a particular level on a given scale implies to artificially break the relations of its elements with an outside composed of the other levels. This is just another way of reaffirming the non-independent existence of facts, elements and events, and that therefore their isolation as independent entities, although necessary for common designations through language and for causal abduction, cannot but always remain somewhat arbitrary and indicates particular ontological, axiological and epistemological stances which have both political and ethical origins and consequences.

In their synthesis of scale and cross-scale dynamics, Cash et al. (2006) start from the “long history of disappointments in policy, management, and assessment arising from the failure to take into proper account the scale and cross-scale dynamics in human-environment systems” to describe the threats to resiliency posed by the “scale challenges” they have identified. They point in particular the problems of ignorance, due to the incredible complexity of the systems studied, and of mismatch between human action and ecological systems, which they consider to be the archetypal scale problem since it has to do with the coherencies between the scales of human institutions and of the biogeophysical resources they aim at managing. The third problem, which is the most relevant sociologically, is the challenge of plurality emerging from “the incorrect assumption that there is a single, correct, or best characterization of the scale and level challenge that applies to the system as a whole or for all actors”. Indeed, while being due to problems often not being mono-scale or -level and to the fact that actors have different criteria for favouring certain scales or levels, this causes competing attempts by actors for straightening or weakening cross-scales linkages. These attempts are often understood as a matter of justice and are therefore political issues (in Cash et al. 2006; Lebel, Garden, and Imamura 2005).

More crucially, even what is understood, seen through and existing or wished to exist ‘at the same scale’ (usually referring to spatial scale) can be of very different nature depending on the perspective. A classical example is the way is conceived the ‘global’ scale from the point of view of the globalization versus the Alter-globalization (also known as Alter-mundialization) movement. The ‘scale’ is the same but its nature is profoundly different because of what is considered within this scale and more importantly the nature of the relations that link the elements within the ‘global level’ and across levels.

But, beyond those specific challenges, Cash et al. (2006) also consider more generally that the “misconception of scale is part of the explanation of why societies throughout history have faced challenges of sustainability”. Nonetheless, and as we will see, the problem is not only the misconceptions of the concept of scale and the potential ‘mismanagements’ which would derive from that, but also the fact that scales, scalings and scalabilities are themselves controversial.

Beyond the technical and literary approaches to the concept of scales, other authors can help understand them from a more critical point of view, with regard to what they produce and express about social relations but also why and how they may become central for actors in their attempts to produce a hold over a social, spatial or temporal territory, or on the contrary to contest or break free from it.

Eric Swyngedouw (2004) puts in relation “the scalar construction of socational processes and the centrality of a politics of scale in the production of particular geographical configurations”. Putting aside the debate that would oppose the objectivity that is claimed both by the companies and the environmental authority

with allegations of subjectivity, the formation of scales can be regarded as political processes in which actors argument their position according to their perceptions of what is and of their interests. Indeed, Swyngedouw also notes that “the mobilization of scalar narratives, scalar politics, and scalar practices, then, becomes an integral part of political power struggles and strategies”. It could therefore be considered that the political process is not about fixing a scale that everyone agrees upon but about continuous mobilizations that aim to shift scales by mobilizing different scales. In turn, these shifts can help contest and alter the geometry of social power, since they shape the social and political configurations and relate to temporal and spatial relations of power regulating the control and access to certain places, therefore producing qualities of temporality and space (Massey 1993; Swyngedouw 2004; Swyngedouw and Heynen 2003).

For Anna Tsing (2005), “scale is the spatial dimensionality necessary for a particular kind of view, whether up close or from a distance, microscopic or planetary”. She also insists on the fact that “scale is not just a neutral frame for viewing the world; scale must be brought into being: proposed, practised, and evaded, as well as taken for granted. Scales are claimed and contested in cultural and political projects.” Following what Eric Swyngedouw was saying, Tsing not only adds that scales are necessary to see or perceive the world or parts of it, but also that they are the product of the work of actors as part of larger projects, which means that they could be embedded in a specific worldview as well as the tool to intentionally produce a certain framing effect. Tsing also notes that “economic projects cannot limit themselves to conjuring at different scales-they must conjure the scales themselves. In this sense, a project that makes us imagine globality in order to see how it might succeed is one kind of ‘scale-making project’”. Therefore, it can first be noted that, while our attention is constantly attracted to the scales that are mobilized to show us the measure of human footprint on the planet, this can also impact the way scales are produced locally. Most importantly, this also clearly implies that studying impacts is not just about studying what exists or the impacts that will occur at specific preexisting scales, but that for each project the actors have to conjure the scales at which they intend to work, study and assess, while having at the same time to either convince that they are appropriate or portray them as obvious or simply take them for granted. In the case of multinational companies for example, their activities cannot be reduced to a fixed scale that is permanently conjured independently from the intentions, but that for each purpose specific scale-making projects are put into action (global reach versus local impacts, for example).

Finally, for Chateauraynaud and Debaz (2017), “temporal scales engage actors in ontological, epistemic and axiological operations that are not self-evident”, and relate to various “temporal modalities of the action and enunciation regimes”. Here the idea is that, as actors conjure scales, they are also engaged by them, as they are also (re)defining the world in which actions and argumentations will then have to deploy themselves.

Those approaches allow understanding scales from a pragmatic perspective, and therefore to consider their indetermination a priori, the variability of their definitions as well as the fact that their temporary crystallization in certain ways might reflect successful mobilizations of some actors through their scale-making projects as part of their struggle to shift the geometry of social power. Moreover, while the authors mentioned above talk either about spatial or temporal scales, the core of their reasonings is, in my opinion and as we will see, applicable to other types of scales.

Before moving on to examples from my fieldwork, it can be useful to take a step aside from describing and understanding the way in which scales govern our perception of the milieu. Showing that scales are far

from being abstractions, a passage from Giraudoux's *Tiger at the gates* (*La guerre de Troie n'aura pas lieu*) is an incredible illustration of the transformation of experience that can occur with the introduction or emergence of a new scale of reference through which, or in relation to which, everything becomes perceived, even if the one described here contrasts notably with the ones described in this chapter:

Hector: So explain to me why we have come back to find the city transformed, all because of Helen ?
Explain to me what you think she has given to us, worth a quarrel with the Greeks?

Mathematician¹⁸⁰: Anybody will tell you! I can tell you myself!

Hecuba: Listen to the mathematician!

Mathematician: Yes, listen to the mathematician! And don't think that mathematicians have no concern with women! We're the land-surveyors of your personal landscape. I can't tell you how we mathematicians suffer to see any slight disproportion of the flesh, on the chin or the thigh, any infringement of your geometrical desirability. Well now, until this day mathematicians have never been satisfied with the countryside surrounding Troy. The line linking the plain with the hills seemed to us too slack: the line from the hills to the mountains too taut. Now, since Helen came, the country has taken on meaning and vigour. And, what is particularly evident to true mathematicians, space and volume have now found in Helen a common denominator. We can abolish all the instruments we have invented to reduce the universe to a manageable equation. There are no more feet and inches, ounces, pounds, milligrams or leagues. There is only the weight of Helen's footfall, the length of Helen's arm, the range of Helen's look or voice; and the movement of the air as she goes past is the measure of the winds. That is what the mathematicians will tell you.

Hecuba: The old fool is crying¹⁸¹.

In this passage, not only the new 'scale' becomes a point of reference to measure all things, but it is also what allows articulating different elements of the landscape. Even more interestingly, the reference is not only made of stable and somewhat objectifiable body parts, but also of aspects more subtle and context-dependent (largely depending on the autonomous activity of the 'scale' too), like "the range of Helen's look or voice; and the movement of the air as she goes past". Thus, the nature of the scale itself articulate the functioning of the senses or instruments through which the landscape is going to be perceived. Finally, not only the transformation of the reference impacts the whole set of perceptual activities of the landscape, and is as well the source of generation of deep affects, but it also allows an understanding in the form of renewed meaning, thus cotransforming both facts and their reach.

8.4 Areas of influence and the frontiers of impact evaluation

Another part of the EIAs within which scales interrelate closely with those of the mitigation hierarchy is the delimitation of what is called the 'area of influence'. The goal of the definition of the area of influence is,

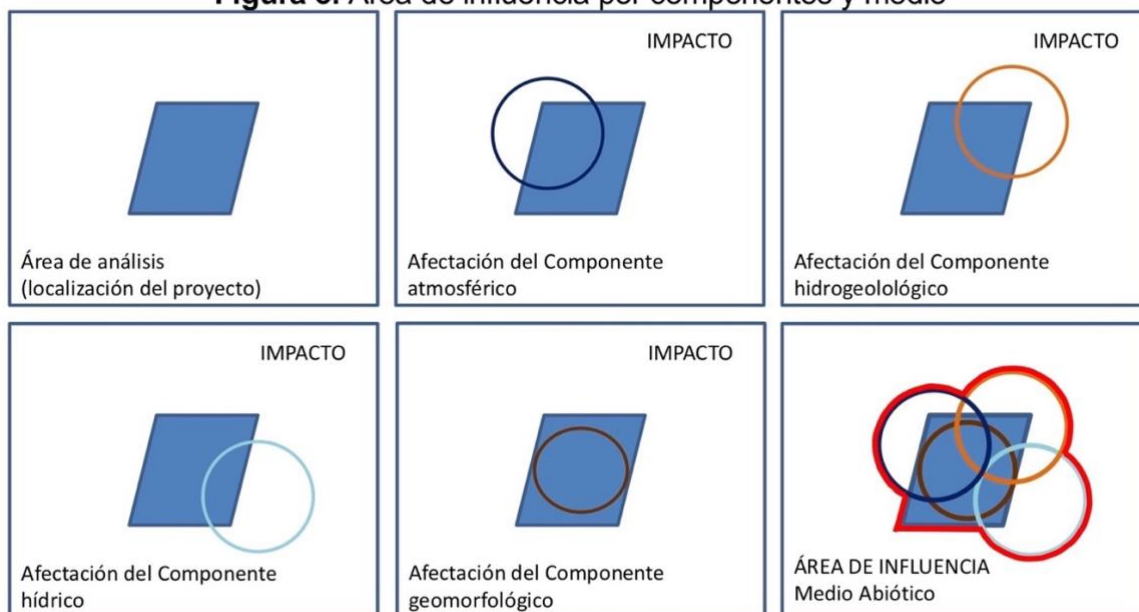
¹⁸⁰ The literal translation of the original denomination in the french text of the 'Mathematician' is actually a geometrician, who is thus more a land surveyor more than what is commonly understood as being a mathematician. Nonetheless, the relation that is made between the mathematics and the survey of the land is quite revealing of land management being a putting of the land into calculation.

¹⁸¹ Jean Giraudoux, 1955, *Tiger at the gates* (*La guerre de Troie n'aura pas lieu*), translation into English by Christopher Fry, New York, Oxford University Press.

according to the Colombian environmental authority, to put into relation the impacts of each of the activities that will take place during the course of the proposed project with each of what they call the mediums (that are the abiotic, the biotic and the socioeconomic mediums) and their respective components (an example for each of the mediums would be the geology, the vegetation cover and the access to public services), so that they can be spatially and temporally identified¹⁸² (see Figure 39). When those impacts are spatially identified at a given time of the project, the area of influence is then delimited according to the official definition, that is “the area in which are manifested in an objective and if possible quantifiable way the significant environmental impacts caused by the execution of a project”. This definition therefore put forward notions of “objectivity”, “quantification” and of impacts that are “significant”. An alternative definition from the ANLA states that the significance relates to what is significant “for the society”, rendering their aim of objectivity quite problematic if seen relatively to its democratic definition and not a hegemonic imposition. The production of areas of influence is therefore a good example of the relationship between the production of knowledge and the consequences of this knowledge on the definition of impacts, in particular with regard to their nature, their amplitude and their spatial and temporal extension, but also on the consequences that these impacts are considered to have.

Figure 39: Reproduction of a figure from the *Guide for the definition, identification and delimitation of the area of influence** produced by the ANLA showing the identification of particular areas of influence different categories of impacts on the abiotic medium of a project, and the resulting area of influence for the abiotic medium, which is the set resulting from the union of all the areas of influence. It can be noted that the figure indicates that the area of analysis used for the calculation of the areas of influence is the area of the project, and that affectations of the atmospheric, hydrogeological and hydric components go beyond the area of analysis; this is, strictly speaking, impossible since by definition the areas outside of the area of analysis were not part of the analysis, unless if what they call the area of analysis differs from the unit of analysis. While this doesn't really matter, since it is only a schematic representation, it nonetheless allows perceiving the relation between the different scales involved in the definition of the areas of influence, and their interdependence.

Figura 3. Área de influencia por componentes y medio



Fuente: Grupo de Instrumentos de la ANLA -2015.

¹⁸² ANLA. 2018. Guía para la definición, identificación y delimitación del área de influencia.

This delimitation of the areas of influence has a structuring impact on all the rest of the EIA, because it defines the limits up to which the project is considered to have an impact and up to which the project holder has to analyse the implications of those impacts. It also defines the limit within which the humans and non-human beings will have the rights to have a say, be cared about or compensated. In particular, in Colombia this delimitation implies that Indigenous and Afro-Colombian communities have the right to a ‘prior consultation’ during which they may discuss the project and, at least in theory, be able to reject it or put some specific conditions to it.

Not entering into the technical details, doing an EIA could roughly be understood as considering everything that the implementation of a project will “do” in regards to what the place where it will be implemented “is” (that is which are its “relevant aspects” and its “own dynamics” according to the perception and evaluation), so to understand what are the projected “impacts” of the project and, most importantly, how they interact. A good part of the work is therefore to characterize the area that the project will directly intervene (and that was defined until recently as the direct area of influence), so to understand its relevant characteristics and what the consequences of their actions on those characteristics are going to be. As we will further see, this is also the moment during which the mitigation hierarchy is supposed to intervene at the project level, so that the projected impacts might retrofit the design of the project in order to diminish the impacts through avoidance or minimization.

This analysis and the way the many parameters are taken into account is also what is going to cause the area of influence to shrink or expand. When they’re not just using a standardized value (for example, one of those values consider that the ‘influence’ goes up to 200 metres around the site where a well will be dug), the technicians use many different methodologies allowing them to establish the extent of the influence. These include scenarios and models which will be unfolded or run within “territorial units of analysis”, depending on what the manual provided by the ANLA calls “the desired level of detail”. But, at least in theory, the unit of analysis is also redefined by the area of influence. The final area is therefore the result of an iterative process going back and forth from the choice of areas of analysis to the definition of areas of influence.

While many impacts can be taken into account, an expert from a consulting company that I’ve interviewed expresses that its most central quality, as tautological as it may seem, is to have a delimitation and share, depending on what is considered, a number of criteria can be taken into account:

Entonces el área de influencia: uno en el área de influencia pues uno debe delimitarla, porque si no te toca echar toda la tierra y hasta más allá, porque uno puede como decir que hay un tema de gases de efecto invernadero y que entonces que tienen que tomar todo el planeta. Entonces uno lo que hace es delimitar y a nivel de metodología y con la experticia de los profesionales, uno define los criterios hasta donde voy a llegar. Entonces, por ejemplo, si yo tengo -ya lo hablábamos de la atmósfera- yo me voy a ir hasta donde vaya esta concentración en mi modelo de dispersión, lo mismo, por ejemplo, en el tema de agua, si yo tengo vertimientos, no puedo llegar y decir: “yo modelo el vertimiento y me voy hasta donde la altura de mezcla me lo permite”. Hasta dónde la concentración de parámetros que vertí en el río se diluyen? Hasta esa altura de mezcla como se llama, me pudiera ir hasta allá, o cuánto tiempo más? Porque más allá pues realmente ya se integraron, pongámoslo así, en la dinámica del río, por decir algo. Lo mismo en el tema de fauna: o sea, yo fragmenté un bosque, entonces me voy hasta dónde? Me voy hasta este relicto de bosque o me voy a ir más allá? Eso ya lo mira uno con cada profesional a nivel de como esa experticia, hasta dónde quieres llegar. O por ejemplo, hay momentos también que las áreas de influencia las debe determinar por barreras físicas naturales, porque uno dice “de ahí ya no voy a pasar”. O sea, si yo tengo la Sierra Nevada de Santa Marta, por ejemplo, yo sé que

Chap8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations

de ahí para allá yo ya no puedo pasar mis... O sea, mis impactos no van a pasar más allá de la montaña, llamémoslo así, entonces uno sabe que también hay barreras físicas, que sabes que de ahí no van a pasar ciertos impactos. Entonces, por ejemplo, a nivel de agua cuando uno no tiene ningún tipo de concesión de uso o afectación al recurso directamente, uno puede crear, por ejemplo, barreras físicas: “vea, yo me voy a ir hasta donde vaya la desembocadura de este río, o de esta quebrada”, y lo delimita también por ese lado. Porque uno tiene que ponerle límite al área de estudio, si no, nunca vas a terminar y se haría impagable un estudio. (CONSUL2)

When considering the particles released into the air, the expert says that they use dispersion models which will foresee the geographical dispersion and concentration of elements of interest. When releasing wastewater into a stream, the idea is to consider the area of influence as going downstream up to where it mixes in a way which allows saying that “it integrated in the dynamics of the stream”. Distinctively, impacts in terms of fragmentation lead to the consideration of existing limits of the ecosystems that have been fragmented. Finally, some natural physical barriers are also considered to be blocking impacts and therefore to limit the spread of the area of influence. In this case, while impacts in atmospheric and aquatic mediums are considered to be a matter of dilution, movements of fauna and mountains seem to offer clearer boundaries. Three out of the four examples therefore rely on the dilution or comparison of the impact with something bigger, thus rendering them either invisible or irrelevant when considered within this larger frame that a change of scale allows. While the dilution implies to scale up, or more exactly to level up along the scale considered, it also requires 'more of the same' of which forms the scale, whether it is atmosphere or water, considered in terms of particles per volume, or physical elements, considered in terms of relative size. They are thus purely relative. Only the fragmentation implies another type of scale reasoning or manipulation and another type of geography as well, as we will further see in a coming section.

An important step in the definition of the area of influence is to analyse the impacts pertaining to each ‘components’, which are also sometimes called ‘mediums’ (see Figure 40). Indeed, since the law 99 of 1993, the EIA have to provide information on the “abiotic, biotic and socioeconomic elements of the medium that may be subject to deterioration”* because of the project.

For each element, there are guidelines orienting the type of scales that can be used, for example and depending on the component, topographic depressions or water basins, ecosystems or home range of a specific species, municipal divisions or traditional territory. But the choice of those units is double-edged: the smallest it is, the more density of detail one can have while leaving aside everything that is outside the unit. On the other hand, with a larger unit, one loses details and the impacts might become more diffuse but, as a larger area is included, you’re extending your view. Thanks to the analysis in this unit, the spatial extent of each impact will be decided, the areas of influence for each component delimited, and the sum of each of these areas will delimit the definitive area of influence.

Unlike what it might seem, this delimitation isn’t just a technical question, firstly because it involves many evolving considerations about the nature, the characteristics and importance of the “do” and the “is”, and secondly because it will have many consequences on the definitions of the impacts and what/who they affect. For these reasons they are often the subject of a negotiation between the companies and the environmental authorities and are also often contested by other actors, as we will further see.

Figure 40: Reproduction of a figure of a Powerpoint presentation¹⁸³ in which the ANLA presents the elements that the environmental characterization has to take into account for each component in order to define the area of influence.



Propuesta de definición del AI

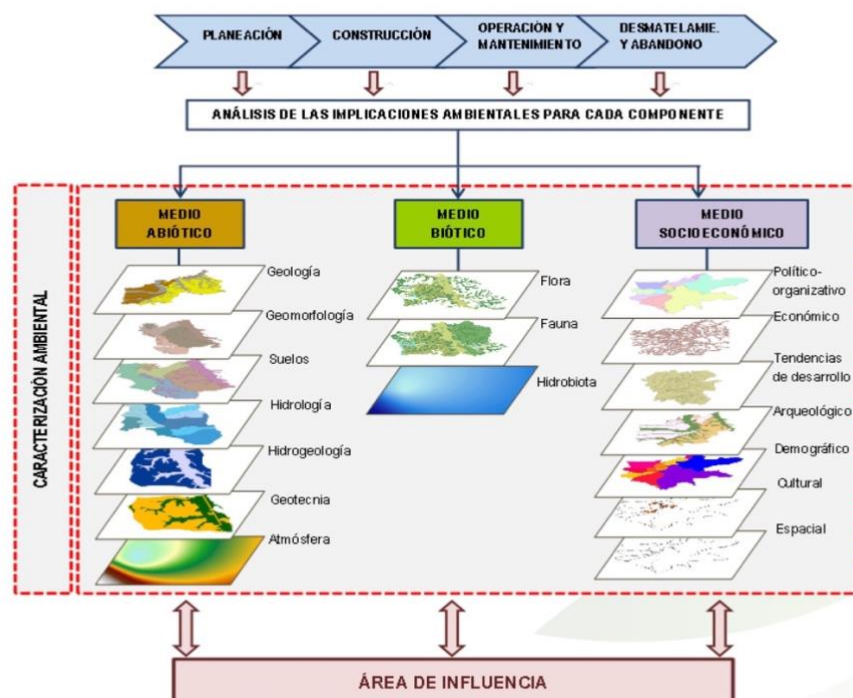


Figura 1. Áreas de influencia por componente.



8.4.1 Defining ecosystems

The evolution of the objects of the environmental protection laws on one hand, and of the definitions used for giving a chance of existence to the no net loss of biodiversity advanced by biodiversity offsets on the other, show the processes of transformation of preexisting unchartered, wild and unregulated legal territories into frontiers to be (somehow and somewhat) internalized through the expression of what Anna Tsing (2005) calls projects and technologies of transformation of geographical and temporal experiences. But the evolution of the concepts used in relation with the law and legal instruments for protection of the “environment”, while using particular terms (ecosystems in this example) for which exist official definitions and guidelines to characterize them, is not always as clear or precise for the actors in some particular circumstances during which they are manipulating them or their representations (and without even considering the problems of the practical implementation of the compensation plans).

¹⁸³ ANLA, January 28, 2014, Definición, Identificación y Delimitación del Área de Influencia, Powerpoint presentation.

In the Manuals of Compensations, which aim at compensating biodiversity losses through ecosystem equivalency, the definition of ecosystems is similar to the one provided by article 2 of Law 165 of 1994, which expresses that an ecosystem “is understood as a dynamic complex of plant, animal and micro-organism communities and their non-living environment interacting as a functional unit”*. Natural ecosystems are based on the same definition, but here the functional unity is considered to be “materialized in a territory, which is characterized by presenting homogeneity, in its biophysical conditions and by not having undergone major transformations by anthropic action”*, without further explicitation of what should be considered as a ‘major’ transformation. Finally, the Resolution which adopted the first Manual of compensations¹⁸⁴ recall that it only applies to “the affectations that are caused to the biotic environment and does not apply to the compensations related to the affectations that are caused to the abiotic and socioeconomic environment”*, therefore adopting the categories used in the environmental assessments.

It is expressed, in the legal foundations recalled by the ANLA in its decisions¹⁸⁵, that

the concept of biodiversity includes both the diversity in the living organisms that make up an ecosystem, and the diversity of ecosystems and habitats, as well as human and cultural diversity. Thus, both biological diversity and human cultural diversity are subsumed under the concept of biodiversity, and thus deserve protection by the State through the determination of measures that genuinely compensate for the impact produced.*

The ecosystems, that the compensation is supposed to compensate, therefore include in some of their definitions the “non-living environment”. But this aspect isn’t really considered and even less valued in the assessment of the specificities of a given ecosystem and in the operation of equivalence that implies the ‘no net loss’ types of compensations. The biodiversity to which biodiversity offsetting scheme refers seems therefore to match only a much narrower definition of biodiversity than what is claimed in the national biodiversity plans.

Compensations areas are not part of the area of influence, because they are not part of the project ‘in itself’, and their impacts or the social impacts of the activities or of the buying of land is not taken into account. In the elaboration of the compensation plan, only the risks relative to the restoration or conservation of the area have to be analysed. Joking about the dangers that can be imagined relatively to the notion of risks, the trainer of the ANLA explained to colleagues that the risks didn’t refer to extreme rain events or earthquakes, or to a mountain which would fall over the compensation area, but were more “socioeconomic risks”. Similarly, they added that the possibility of jaguars entering the compensation area wasn’t a risk, since it could actually be a good thing, but that risks were much more related to local people letting their cattle enter the area, showing that local inhabitants were much more considered to be an obstacle to compensations than beneficiaries or part of the biodiversity that is said to be compensated.

Although all the laws and compensations are based on or emerge because or in relation with the evolution of the perceived nature and properties of the environment (or biodiversity or else), this is not necessarily reflected directly by the EIA guidelines and compensation schemes. Indeed, those express mostly the compromise reached by the actors involved in its concrete development and application, in accordance with

¹⁸⁴ MADS, Resolution 1517 of 2012, Por la cual se adopta el Manual para la Asignación de Compensaciones por Pérdida de Biodiversidad.

¹⁸⁵ See for example: ANLA, Resolución No. 00911, June 18, 2018, “Por la cual se otorga una licencia ambiental y se toman unas determinaciones”.

their respective interests and their heterogenous capacities to influence the epistemological and ontological choices made.

It is also interesting to see how the legal framework quoted above insists not only on the fact that there should be a compensation, but that the measures taken should “really” compensate the impacts. As the previous definitions show, the biodiversity that ought to be compensated is in theory equivalent to the biotic medium, which is interacting but separated from the abiotic and the socioeconomic mediums. Also, while there are compensations specifically directed to humans, depending on the types and origins of the qualified impacts, the compensations for the components of the “socioeconomic medium” in relation to impacts on the “biotic medium” basically only consider the loss of “productive activities”, in particular farmland, which is quite far from the deep interconnection that is described. This indicates that the compensations of biodiversity only loosely follow the evolutions of the conceptualization of biodiversity and the place that humans have in it, or in relation to it.

But even environmental compensations are spliced into subcategories without unity, so that they end up being done differently in diverse places depending they relate to compensations of biodiversity, wood reserves or protected species. The limitation of the scope of the concept of biodiversity, and of its elements, properties and their relations, when applied to the definition of environmental compensations, is also reflected in the division between the compensation schemes that are considered within the environmental impact assessments, and which follow the division of those assessments in three “mediums”: abiotic, biotic and socioeconomic.

This division between the three components makes that the valuation of the 'same' natural element or impact can greatly vary according to the component through which it is seen, leading to its ontological splitting and multiplication. For example, as the compensation group of the ANLA had gathered to discuss possible emergency compensation measures following an extreme lowering of the Cauca River's flow due to the problem with the Hidroitungo hydroelectric power plant (as recounted in section 5.3.2), they wondered what may have been the impact on the fish population and whether something should be done about it and what measures to be imposed to the company they could propose to the managers of the ANLA. The problem was that they lacked actual data and could only make conjectures about the situation, and in particular how bad was the impacts and how long they would last if they weren't permanent. The group is specialized in biodiversity compensations, but they knew that the pressure was largely coming from the fact that many people depended from the fishing as a job, or on the fish to feed themselves. The fish were then divided into ones that were eaten and others that weren't, the ones living in this river and the others that could be introduced to facilitate the repopulation because juveniles were easier to produce, and it appeared that the fish of yesterday were not the same as the ones of today, themselves with different properties and valued differently than the fish of tomorrow. It was finally discussed if on one hand some fish should not be farmed in the area as a sort of social compensation while the biotic compensation in terms of the fish population in the river should maybe be done separately on the basis of distinct sources of information and on the evolution of the state of the river in the coming months.

This separation of the milieux and of the analysis in three components is also something that is also criticized by associations elaborating arguments about the ways EIAs are done, as expressed by one of my interviewees:

Hasta dónde llegan los impactos? Yo creo que esos son... es una escala nacional, incluso, internacional. Es difícil, ¿no? Lanzar las preguntas es compleja en términos de 'qué es lo que hacen', cómo lo vemos, y 'qué es lo que hay', porque lo que hay es una fracturación de [los impactos]: esto es lo económico, estos son sociales, estos son ambientales. En términos incluso de la ANLA: nosotros en los espacios de interlocución y visitas que hemos hecho en terreno con la ANLA, la gran dificultad que hemos tenido es que llega por decir, un equipo de 12 personas y se van a repartir el trabajo de estas personas al mismo tiempo, entonces cuando hacemos las denuncias, nos han respondido, "no, es que eso se encarga el funcionario social y yo soy biólogo", "pero como así, o sea, usted no me puede recibir entonces quejas sociales", "no, porque no tiene que ver con la biología", o "no, porque no tienen que ver nada con lo económico". Entonces eso ha sido una gran dificultad porque para nosotros las tres esferas de lo biótico, lo abiótico y lo social, pues están interrelacionadas. (..) Entonces de esa manera, nosotros vemos absolutamente impropio dividir los impactos en estas esferas de las licencias ambientales, sin buscar cuando se presenta un hecho, ver cómo se relacionan. (RiosVivos1)

Following the division between components, a similar breakup is done with regard to the repartition of the work and specialization of the experts. Thus, in general, at least three evaluators go to visit the project site, a 'biotic', a 'physical' and a 'social' evaluator, each with their own focus, interests, perspectives and perceived responsibilities, which can be found in the ANLA breakdown scheme (as shown in the Figure 40 above) and then in the tailored maps developed by the company for each of the specialists.

On our arrival for the visit of the coal mine project in the north-west of Colombia, that I've been able to follow as part of my fieldwork and which is described in Chapter 5, representatives of the mining company first presented two different maps to the biotic evaluator: one representing the plots of the flora and fauna surveys and one representing the "vegetation covers". But they quickly realized that this was problematic because part of their work was actually to interpret the correspondence between the characterization of these plots with the type of ecosystem represented on the map and, as their interest in all ecosystems was not equal, they needed to locate the plots they wanted to visit according to their location within ecosystems that seemed more relevant to them (as shown in the top right picture of the Figure 37, Chapter 6). They thus complained that would have to go back and forth between one map and the other, and to find ways to locate one information on the other instead of having just one map with both types of information. The company manager promised they would have a new map for the next day. This first anecdote showed me that, during visits, evaluators must not only try to understand what is, verify the information produced by the company, but also relate it to the project it proposes, and that for this purpose the use of maps, and the 'right' maps, was absolutely central to their work (see Figure 41).

After the distribution of maps, the biotic evaluator and those who would accompany them left for the site where the coal mine was planned. They were chatting in the car when the evaluator asked that he would be informed when we would enter the site of the planned mine, which boundaries are not physically marked in the landscape. They got angry when being answered that we were already in the area where the pit of the mine would be, without them even realizing it. The 'biotic' then asked the car to stop, went out to take some photos of the road and then looked at the map to try to get a sense of our actual position in relation to where mine would be. Only a strong capacity of imagination and projection was allowing to envision the meaning of the space in which we were and what it would become during the realization of the project.

Figure 41: Pictures taken during the visit of the mine project and which shows the constant use of maps, whether in the offices or in the middle of the site, as references to be articulated with GPS data, observations or pictures.



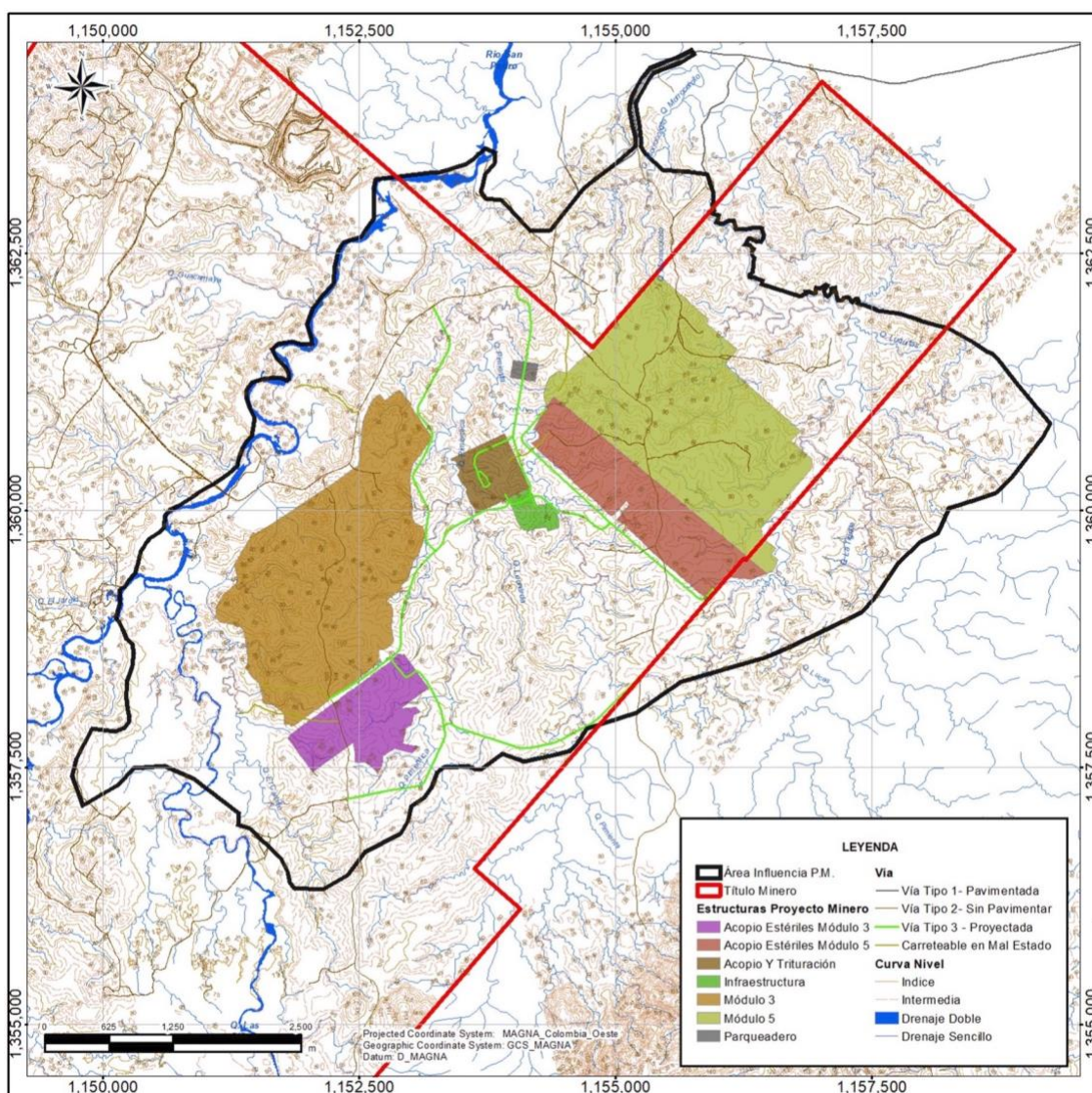
8.4.2 Setting impacts boundaries

To analyse how the boundaries of impacts and evaluations are established and get transformed, I will take examples from three projects showing how actors interpret the various aspects of the milieu interacting at the loosely defined location of a planned project so to define an area of influence. This will allow to show the types of reasonings and arguments that this involves as well as to focus on specific contested aspects of the definition of the areas of influence.

In order to have a better idea of the way each medium and its area of influence is represented on the map, which then becomes what will guide the work of verification, I'll start by describing the respective maps of a coal mine project that have been given to the 'abiotic' and 'biotic' specialists during the visit I accompanied, as well as the map representing the final area of influence (and which therefore also includes the 'social' one, which isn't reproduced here).

The first map (Figure 42) represents the area in which the project will be implemented (the rectangles, with the two largest ones being the pits) and the line in black represents the area of influence for the abiotic (or 'physical') medium, according to the analysis they did, and therefore the limit up to which the impacts of their activities will be "significant". Beyond this line the characteristics that have been taken into account should not be "significantly" different with what was measured at the time of study or be above legal limits.

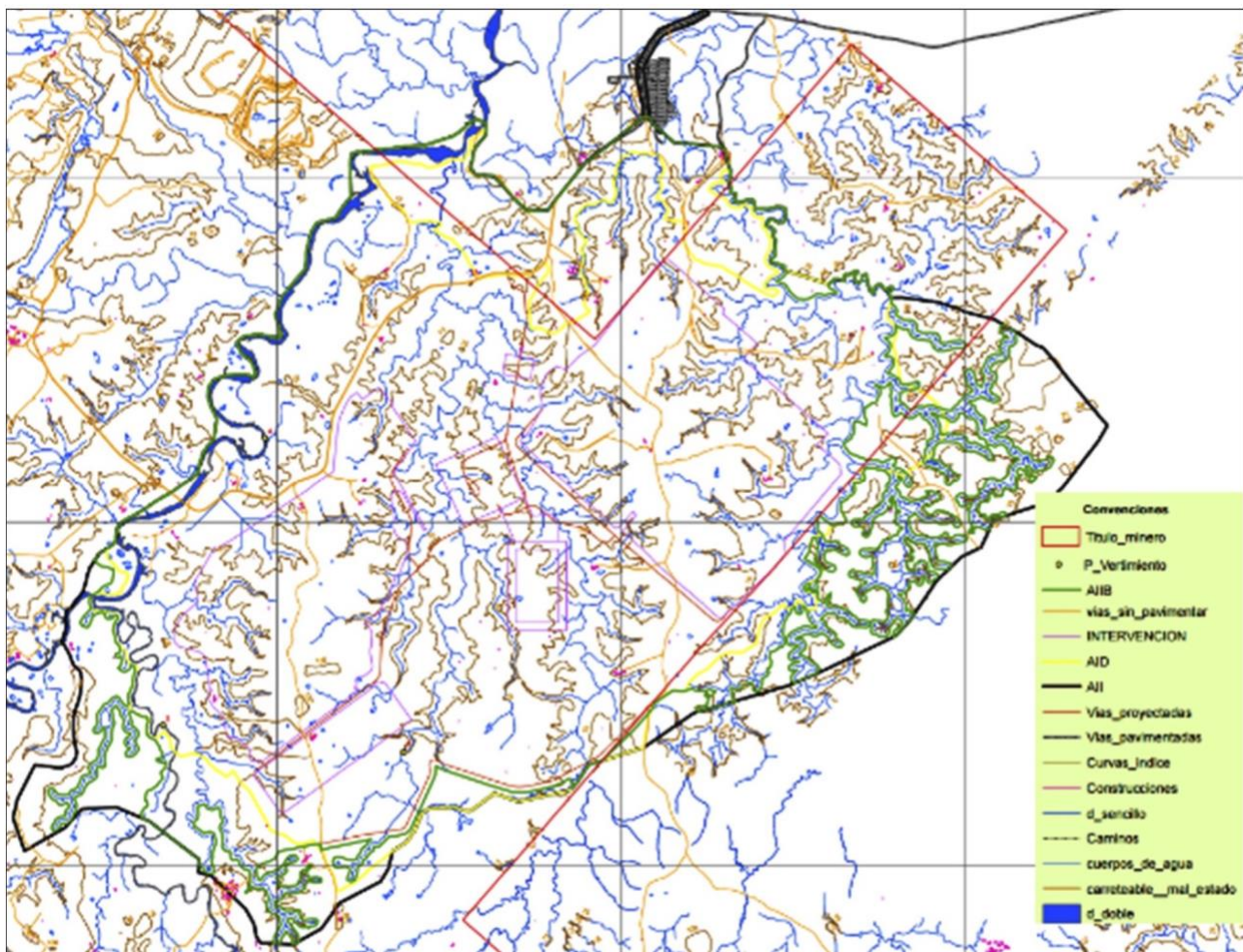
Figure 42: Map of the area of influence for the abiotic component presented in the EIA of the coal mine project¹⁸⁶.



In the EIA submitted by the company, it is explained the criteria used for drawing the limits of the “area of influence from the abiotic point of view”. In particular, they express that they considered the industrial wastewater discharge zones in the nearby streams and then put the limit “further” to the point downstream where was expected the “total dissolution of the discharge”, which is also called the ‘mixing length’; the roads that would be used to transport the coal; that geological, geomorphological and geotechnical analyses led them to establish a 500-metre strip around the exploitation pits to account for possible instabilities associated with morphodynamic events, but they add that “it is important to note that the boundary drawn as an area of influence is much longer than 500 m”*; and that finally the main element which led to draw the actual area of influence was the annual dispersion model of fine particles (PM10), by including the zone in which the concentration was above a given threshold.

¹⁸⁶ This map and the followings are extracted from the document Estudio de impacto ambiental para la explotación de carbón a cielo abierto en los tajos 3 y 5 - título minero 4676, submitted by SATOR S.A.S. to the ANLA in 2018 under reference LAV0060-00-2018.

Figure 43: Map of the area of influence for the biotic component presented in the EIA of the coal mine project.

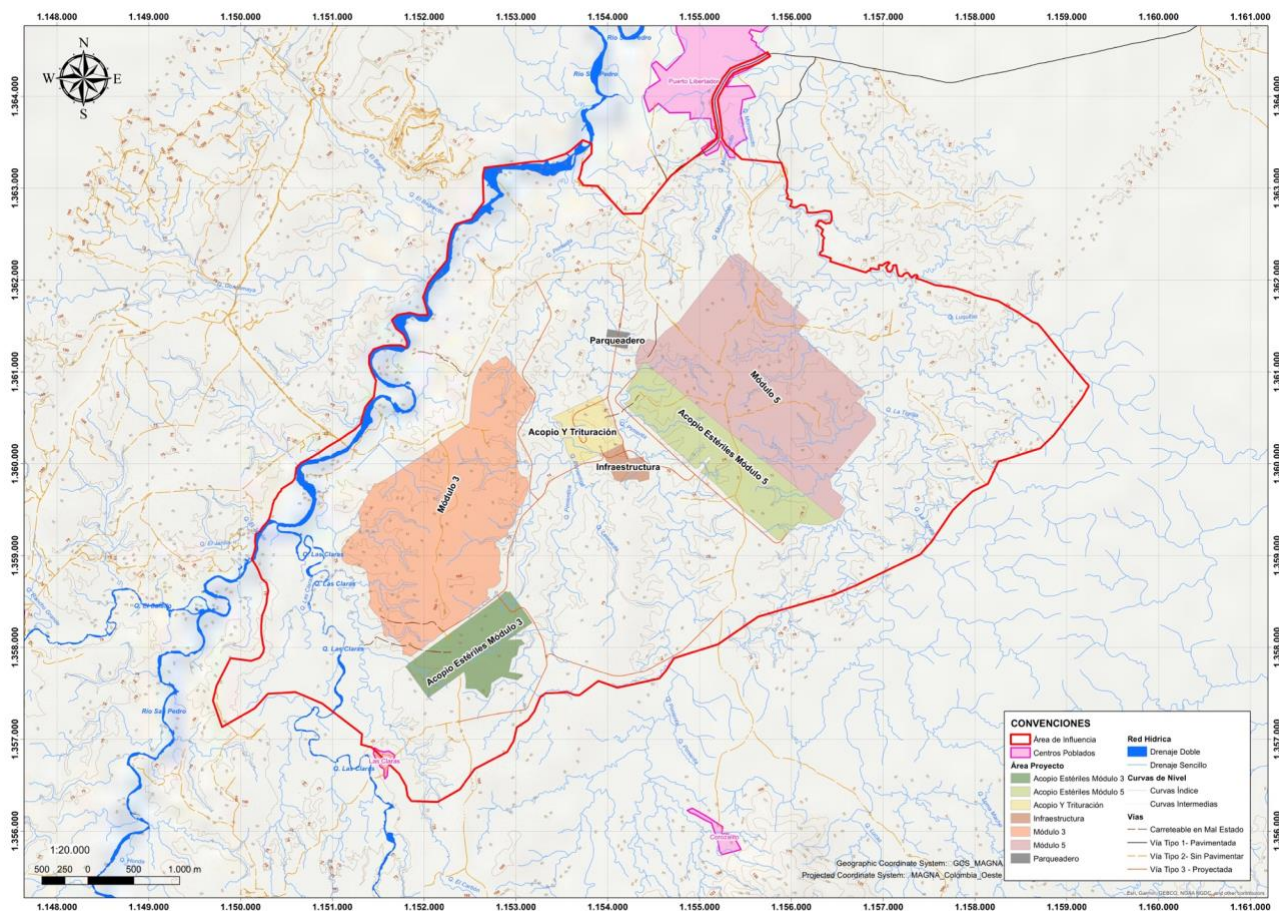


The second map (Figure 43) represents the biotic area of influence (in green). The company describes the “environmental limits” represented by the area of influence as corresponding

to the area where the impacts can be immediately evident and extend to a certain area; based on the intervention on the vegetation cover, degree of sensitivity of the fauna resource, limit to which the dissolving power of the water body neutralizes the pollutants discharged by the project, changes in the dynamics of the populations, among others.*

It can be observed that the streams on the sides of the project have been included, but only until a certain point. The company explains that they included those areas because the gallery woods present along the streams would serve as corridors for the fauna wanting to get away from the mine, which was not the case of areas of pastures which therefore haven't been included. In their description of the factors contributing to the area of influence, the company stated that it was important to clarify that the area of soil intervention by the project was much smaller than the area they proposed as area of influence, thus seemingly showing that they wanted to extend the area of influence to an area somewhat larger than their strict obligations, but that they didn't want this to be interpreted as them being too impactful.

Figure 44: Map of the final area of influence presented in the EIA of the coal mine project.

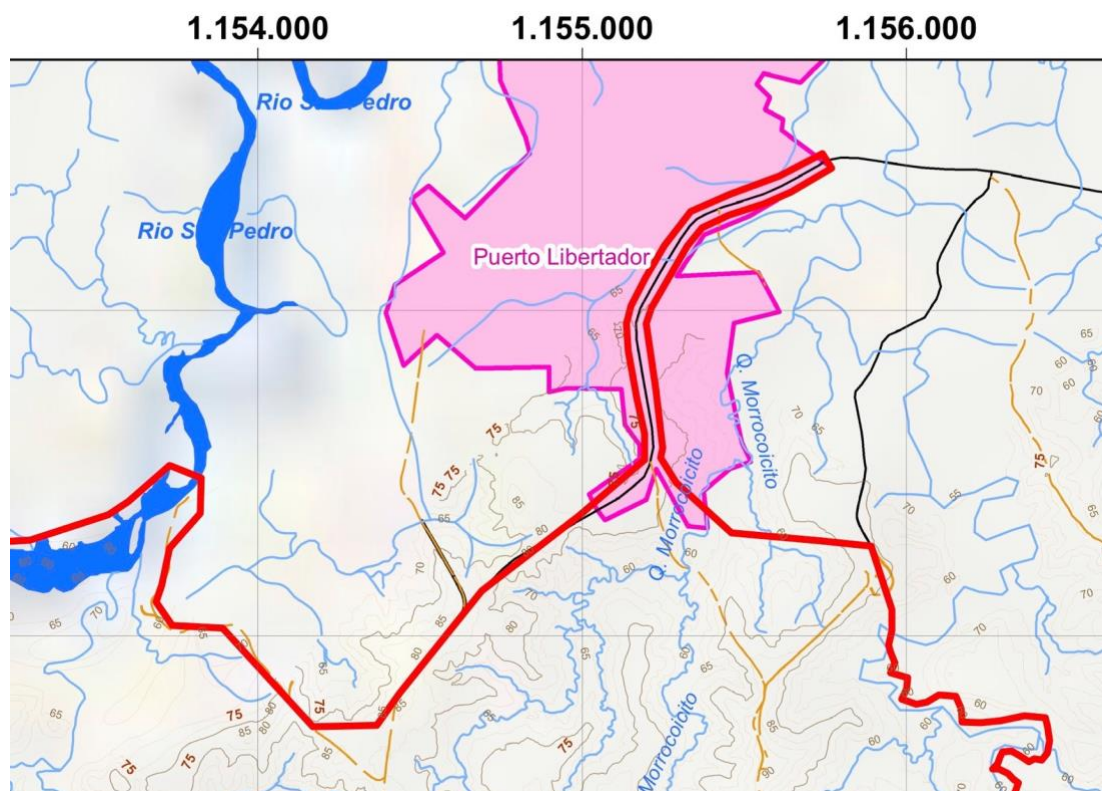


The company didn't provide a map for the "socioeconomic medium", because it is considered that it is the larger one and encompasses the other ones, since all the impacts are human-oriented, but included the map reproduced above (Figure 44) to show the final area of influence (in red) resulting from the addition of those from the three mediums. This idea that the socioeconomic area of influence always encompasses the other one is also the reason why the different "mediums" and their areas of influence are always presented in this order. While the town north of the project and two villages in the south were included on the map, the company indicated that their affection is only limited to some neighbourhoods along the road going through the town, because of the noise and particles, and that the two villages in the south would be affected by the modification of some of the local roads, and one of the two is on the limit of the possible affection by PM10. They nonetheless become integrated in the area of influence in a way which makes it become discontinuous (that is that the area isn't extended up to the villages, but are integrated in isolation), while impacts relative to the other mediums are always considered as a continuous extension of the area of influence.

In their project, most of the coal that was planned to be extracted will remain within the area of the mine to be burnt in a projected coal power plant — and the fact that they've split their project in two could be regarded as highly problematic, in particular for the elaboration of determining scales (see the section on cumulative impacts). The rest of the coal will be transported by a road that goes through the town. The company and the consultants working on the EIA consider that there might be some contamination (particles and noise) that can expand up to a certain distance and therefore affect the houses close by the road. Therefore a buffer

around the road was also included in the area of influence (see Figure 45). But the specialist of the socioeconomic component of the environmental authority told to the people of the company during the visit that it was not enough, because the traffic augmentation could also cause a security issue for all the persons who are usually crossing this road, and so those persons had to be identified as well, regardless of where they live. “Usually crossing” was thus the threshold beyond which in this case people have to be considered. The scale of the impact is therefore not considered to be a pure spatial extension, but a relational scale, with a limited depth.

Figure 45: Detail of the map of the final area of influence for the biotic component presented in the EIA of the coal mine project.



During a meeting about the project at the ANLA, the ‘social’ expert also critiqued the elements presented by the company, saying that although they had described the different neighbourhoods of the town, they “hadn’t really characterized the impact”, while they somewhat did it for the villages south of the project, but “without really drawing the consequences”.

As the Figure 45 shows, the area of influence only goes up to the junction with the other road further north. While experts of the ANLA had asked them to include the road, the people from the company argued during a meeting that at the limit of the area of influence the road was becoming a national road, which is part of a national project, and therefore the impacts of their use shouldn’t be taken into account for specific projects. Indeed, they said, “if we had to do it, that would extend a lot the area of influence, and what would be the limit then?” This example show again how the different scales interact in relation to what could be called an administrative distribution of the impacts. Because of the complexity of determining what impact should enter or not in a given project (either by being taken into account or by attribution) even the employees of the

environmental authority often have to refer themselves to the legal and technical manuals designed to help them and the companies sort them out.

Another problem that was raised by the environmental authority is the possible impact on the access to public services that could be caused by the augmentation of the population of the town, and that the company would be considering. But this didn't cause the whole town to be included in the area of influence. Likewise, many other possible impacts were not considered: for example the change in the occupation of the workers of the town, the political consequences, the dependency to the coal mine, and many other possible impacts that could be imagined. The hypothesis that could be made is that those impacts are traditionally not included in the assessments because it might be technically too complex, because it is politically not convenient or because the actors involved didn't challenge their exclusion. On the contrary, in some other cases new types of impacts may be considered for being included in the 'terms of reference' of the EIAs. For example, during the public consultation made by the ANLA about the elaboration of a new Manual of Evaluation of Environmental Studies, in which they had included a section about the evaluation of olfactive impact studies, the Colombian Oil Association requested it to be removed, since those studies were not part of the EIA requirements. While agreeing with the company, the ANLA nonetheless responded that they would thus think about including this obligation in the general requirements, because of the numerous grievances about the smell produced by hydrocarbon projects that they were receiving:

The comment is accepted in the sense of making the evaluation application consistent with the requirements of the general Methodology and the Terms of Reference. However, it should be noted that in Hydrocarbon Projects, one of the most critical issues with nearby communities or populations is precisely the impact of odours; for this reason, and as part of the process of updating the Terms of Reference and the general Methodology for the preparation and presentation of Environmental Studies, the need to monitor offensive odours in the area of influence of Hydrocarbon projects is being considered.^{187*}

This response, indicating that the ANLA would consider the inclusion of olfactive impacts for the determination of the area of influence (even if it the methodology isn't specified), shows the possible evolution of what is considered as an impact. However it remains uncertain why the inclusion of olfactive impacts, which they say were largely described by communities around the projects, became worthy and eligible for consideration at this particular moment.

The case of the Hidroituango dam that has been built recently also offers interesting examples, since numerous scale-related issues were raised by diverse actors, leading them to try to conjure alternative scales.

As it is usual with hydroelectric projects in Colombia, the company didn't include in its area of influence much more than the projected reservoir and a slight buffer, as if the localized construction wouldn't affect the rest of the river. Therefore, none of what is downstream was included, at any scale. On the contrary, numerous actors, and in particular the Nutabe indigenous, were advocating for taking into account the river as a whole, while the people living on the banks of the river downstream wanted to be recognized as being affected as well and be included in the area of influence of the project.

¹⁸⁷ ANLA, Comentarios a propuestas normativas y documentos técnicos de licenciamiento ambiental (Manual de Evaluación de Estudios Ambientales), 2015.
http://www.minambiente.gov.co/images/Atencion_y_participacion_al_ciudadano/consultas_publicas_2016/Respuesta_comentarios_consulta_publica_Manual_de_Evaluacion_041016.xlsx

The idea of conjuration in relation to river scales was also at the centre of the “Conjuro de ríos” exhibition at the National University of Colombia in Bogota which focused on the nature of the rivers, on the relations that humans have with them and which also included videos about the Hidroituango disaster. The intention of the exhibition was described by one of its curators as the following:

Waters and rivers are powerful beings with a great influence on the formation and organization of life. The most ancient cultures have managed to persevere in looking at them in various dimensions of existence: as a sacred entity the river thinks, expresses and conjures through its materiality that is the sustenance of our human culture and that of many other beings and entities. Reconnecting us in consciousness with this vision of water is the primary objective of this exhibition¹⁸⁸.*

Beyond expressing that rivers are conjuring themselves through their materiality when seen as a whole, a conjuration which was also the aim of the exhibition itself, the curator also indicates that this is not just a fact to accept but consciousness to develop, therefore reinforcing the view that a large part of the tangible comes from the experience and not from demonstrations.

For example, Rios Vivos, a human rights association regrouping people affected by dams in Colombia (and fighting for the recognition of this status of affected people, since they are often not recognized as such) expressed during a protest that they wanted “to make visible the effects of the populations downstream and upstream of this project, knowing the implications that this will have on their lives, not only at the economic level but also at the psychological level”. Other actors, including some that I’ve interviewed and demands expressed in various media, wanted to include as well as impacts taken into account for the delineation of the boundaries of the area of influence of the project: the fish, the fishing activities and the whole ‘productive chain’, the hydrobiology, the loss of activity because it wasn’t possible to do artisanal mining anymore, the communities related to those directly affected and that also suffer changes, and their relations with the affected communities changes, so are their activities, familial relations, the emission of greenhouse gases, the impacts on gender issues, the irreparable wound that the dam will cause to a river that is a subject, up to the future generations, the whole country or the considerations or irreparability of damages.

Between the limitation to specific kinds of impacts to the reservoir area and the alternative scales of impacts that are mobilized through argumentation, narratives and politics, a wide range of scales of different natures, or ontologies, are intending to come into being with performative effects on the geometry of social power within which the actors are navigating.

Even before the severe troubles encountered by the company at the end of the construction of the dam, the Controlaria, the Colombian organism of control of public institutions, had already carried out an investigation over the management of the licensing process of the project by the environmental authorities and strongly condemned it¹⁸⁹. While critiquing numerous aspects of the licensing process of the project, the Controlaria also discussed the delimitation of its area of influence. But before that they stressed, first, that key characteristics of the presented environmental studies and which to be analysed by the authorities are the “speciality”, including the definition of boundaries of the territory, of the area of study and of the area of

¹⁸⁸ María Belén Sáez de Ibarra, curator, “Conjuro de ríos”, Selva Cosmopolita, Universidad Nacional de Colombia, 2018-2019.

<http://patrimoniocultural.bogota.unal.edu.co/internas-museo/2018/conjuro-de-rios.html>

¹⁸⁹ Gestión de las autoridades ambientales en el proceso de licenciamiento proyecto hidroeléctrico Ituango MADS-ANLA —CORANTIOQUIA —CORPOURABA con corte a mayo de 2018, Informe auditoría de cumplimiento, Contraloría General de la Republica, August 2018.

influence, and the “coherency” of the criteria used and of their logic. Secondly, they pointed out the preoccupying qualification of certain impacts whose importance was bluntly underestimated in the EIA¹⁹⁰, qualification which hadn’t been contested by the environmental authorities. Other parts of the document enumerate a great number of other issues with types of impacts that have not or not enough been taken into account, including on human health, forest cover, fish populations and endangered species.

In the section related to the definition of the areas of influence, the Contraloría starts by quoting the definitions of the area of direct and indirect influence (a distinction that was used at the time of the licensing of the project but was later removed). Then they note that the communities that have been affected by the risks due to the critical situation of the dam weren’t included in the area of influence, and that these problems “reveal serious irregularities in the results of the exercise of delimitation and definition of the Project’s areas of influence”*. They point out in particular that the risk scenario of a dam failure had received a level 4 qualification, which relates to “minor risks” that are “acceptable”, and with which it is considered that “it is acceptable to live with”. But, as the ANLA expressed elsewhere, the area of influence should normally only include the environmental impacts produced by the “norm operation of the project”, and not those linked to “the most critical scenarios that correspond to contingencies and that are evaluated and managed in the risk management plans¹⁹¹”. Nonetheless, for the Contraloría the lack of inclusion of the communities then relates to impacts which weren’t considered, and therefore attended, because, according to them, of a lack of rigour from the company in the preparation of the EIA as well as in the way it has been analysed by the environmental authority. While the Contraloría had critiqued in introduction the overall weakness of the EIA process in itself, the emphasis they put here on the lack of ‘rigour’ implies a more technical critique about how rigorously the EIA had been done.

In its response made to the Contraloría for its investigation and quoted in the final report, the ANLA states that it is normal that the communities downstream weren’t included in the area of influence because they were only subjected to a risk, and that the area of influence only concerns the impacts due to the activities of construction and operation and that the issues of risks are treated separately. They therefore isolate the issues of impacts and risks completely, and do not consider risks as impacts, even to the populations who have to live with this potential risk of high magnitude. Beside the issue of risk, the Contraloría also raises the fact of the other downstream impacts that a dam causes. At least two institutions, the regional environmental authority and a group of municipalities, tried to point out to the ANLA that some downstream impacts of dams, well-known according to them by the academic community, were not taken into account and therefore the areas where they might occur were not included in the area of influence. They cite impacts on the cultural aspect, the productive sector and in particular artisanal gold mining and fishing, biological and hydrobiologic

¹⁹⁰ The Contraloría detailed numerous impacts for which the qualification couldn’t be understood: “Para la CGR es preocupante la jerarquización y la calificación de importancia que recibieron ciertos impactos dentro del EIA. No se comprende que impactos como “Contaminación de corrientes superficiales y subterráneas” (2.8), “Cambios en la dinámica fluvial del río Cauca” (4.7), “Muerte y desplazamiento de especies faunísticas” (4.7), “Aumento de la presión por los recursos naturales” (4.9), “Transformación de los sistemas culturales de la población afectada indirectamente” (2.7), “Afectación de infraestructura” (0.6), “Generación de conflictos motivados por la presencia del proyecto” (2.3), recibieron calificaciones de entre “Poco significativa” (0,0<X52,5) y “Medianamente significativa” (2,5<X55,0)4, lo cual a juicio de la CDMA-CGR no es consecuente con las afectaciones derivadas del proyecto. (...) A modo de síntesis, dentro del EEA ningún Impacto Ambiental -IA- es crítico, no se valora el IA por cambio en la calidad del agua, no se hace la contrastación CON/SIN proyecto, no se realiza una estimación de Ecosistemas Estratégicos (como el Bosque Seco tropical - BsT), etc., lo cual a juicio de la CDMA-CGR es una deficiencia técnica muy seria.”

¹⁹¹ ANLA, Comentarios a propuestas normativas, op.cit.

fragmentation, which includes the migration of species, changes in the river flow and sediments as well the possible extension of those changes up to a complex of swamps. The Contraloría concludes that the ANLA had been informed “on the shortcomings in the delimitation and definition of the area of influence due to the lack of identification and definition of the effects and possible impacts caused by the project in the municipalities located downstream”*, without any reaction from the authority. The company, who had also been informed, stated that those municipalities had not been and will not be affected by the project, without further arguments. The Contraloría concludes on the contrary that the affectation is not only obvious but also “notorious in the light of the experiences of the emergencies that have occurred and the critical situation of anxiety in which the communities of the municipalities live”* and therefore confirms their intention to move on to possible disciplinary processes.

To complete this analysis of the way to use areas of influence to delimit and contest the delimitation of impacts, I’ll now take the case of a harbour extension project in the north of Colombia and that is owned and used by a coal company for exporting its production. This is a particularly interesting case because it involves indigenous communities and somehow ‘jumped scales’, since it this ‘local issue’ finally ended up to be resolved by the National Constitutional Court, and relate to the high-profile Cerrejon mine whose consequences are regularly denounced by a wide variety of actors. In Colombia, indigenous communities have the right to a “prior consultation” when a project will be implemented near their territories and will affect them in a way or another, while other communities only have to be “socialized” to a project that will be implemented near them and when they’re some forecasted possible impacts. In some cases, especially after a mobilization against the project, the environmental authority can force the company to organize, under their control, a public hearing of the opinions of whoever wants to speak out about the project. But those hearings only aim at raising concerns to the authority, who will decide what is relevant to take into account into their decision. In the case of indigenous communities (and a few others), the company have to reach an agreement with them in order to proceed with the project. But that is only true when the community is considered to be part of the area of influence of the project, and therefore the companies will generally try to avoid having likely impacts on indigenous communities. Indeed, the licensing process requires that the company, after having delimited the area of influence of their project, send the geographical information of the area, in the form of a table with a number of geographic points forming altogether a polygon, to the ministry of the interior who will produce a certificate stating whether they’re or not indigenous in the area submitted to them. This is important because in 2016 the constitutional court had to decide the case brought by an Indigenous who was claiming that, contrarily to their rights, his community hasn’t been consulted when the company decided and got authorized to expand its harbour in 2014 (an expansion that requires a modification of the environmental licence and as such has the same requisites that any environmental licence). The company is stating that it is because the community was not impacted, so they didn’t have to be consulted, while the indigenous plaintiff claims the opposite. The judge therefore had to evaluate whether the area of influence was correctly drafted or not¹⁹².

The problem, as set out in the trial, is that the company want to expand their harbour but, as the expansion works were going to happen only inside the already existing complex, they only submitted the area where they

¹⁹² Corte Constitucional de Colombia, Sentencia T-704/16 del 13/12/2016, Acción de tutela instaurada por la Comunidad Indígena Media Luna Dos en contra de la Nación, el Ministerio de Ambiente y Desarrollo Sostenible, la Autoridad Nacional de Licencias Ambientales (ANLA), el Ministerio del Interior y la empresa El Cerrejón.

were going to do the works and not the larger area of influence that would only have been required, according to them, if it was a new project or an actual expansion of the industrial area. The type of work they want to do could then be understood as a kind of intensification or densification of the activities within a given perimeter. The company argues that the indigenous do not have any fishery activities within the area of the planned works, without mentioning it is due to the fact that they are already prohibited from doing so. The conclusion of the lawyer of the company is that “although the indigenous community of Media Luna is adjacent to Puerto Bolivar, it is not located directly in the area of influence of the specific project of the three additional works (...), nor will it be impacted by it”*. On the other side, the municipality says that there are already impacts on the community due to the dust coming from the harbour.

A previous court of first instance, which judged the case before the Constitutional Court, first analysed the concept of direct impacts before trying to apply it to the specific case. They also said that although various ‘technical evaluations’ were stating the absence of indigenous communities, it was not possible to ignore the fact that they were present in the area, as it was also noticed by the technicians of the environmental authority. But those argued that it wasn’t their role to say whether indigenous communities were present or not, but was the exclusive responsibility of the Ministry of the Interior on the basis of the geographical information presented by the company. This shows again the ambiguity and limitations of what a ‘technical evaluation’ means.

On the other side, since the court also tries to define what it means that an indigenous community receive a direct affectation from a given project, and in particular what are the possible natures of the link between a project and an indigenous community that could be characterized as an affectation. And this is where it becomes really interesting. First, the court insists on the fact that there is a widespread but wrong understanding that an affectation on indigenous communities is an affectation on their territory, and in the context of Colombia on their recognize territory, that is on their reserve. It considers that it would be mistaken to try to define that it exists an affectation or not only on the basis of whether there is an overlap between the area of influence of the project and the indigenous territory when the territory is understood as a specific physical space. Therefore, the certificate given by the Ministry of Interior stating whether there is overlap or not cannot be sufficient (or in fact doesn’t say anything) to say whether there’s affectation and therefore that a consultation is needed or not. This is a very strong statement because in fact this was the only used and recognized procedure by the environmental authority, which is therefore disavowed, to determine whether they should request to the company a consultation of the indigenous communities.

The reason that the court gives to explain why the physical territory is not a good parameter in relation to a possible affectation is that not only the ancestral territory doesn’t match the reserves but, on the contrary, “the indigenous territory is a much broader cultural concept in which the traditional, social, economic, cultural, spiritual and other traditional practices of these peoples take place”*. To support its argument, the court also quotes another judgement stating that, although reserves are a good tool to protect indigenous lands, “the collective territory is not a spatial concept, but a cultural one (the community's living environment). And, consequently, it can have an expansive effect, aiming at the inclusion of spaces of social, cultural and religious relevance for the communities”*. This definition of a territory that is cultural thus completely transforms the nature of the links that may be considered as being the expression or indices of the extension of the territory, radically shifting the geography and ontology of the territory, and of the scope of valuations that may be considered relevant.

reproduced here as well to help comprehend the types of argument that they represent (see Figure 46). Although it is said that if it was the area of direct influence that was relevant the company would be right, the judge states that an ‘area of direct influence’ and a ‘direct affectation’ are not synonyms, the first being the extension of an impact “in physical, cartographic, geographical, spatial terms”* while the second concerns potential prejudice to the rights of a community. This judgement therefore puts forward that environmental impacts do not only have the potentiality to affect various physical, biological or social components, but also the rights that might possess those who can suffer an affectation.

For the judge, the extension of the harbour will have affectations in itself but, more importantly, he considers that “this expansion cannot be analysed in isolation, but rather in conjunction with the entire exploitation of coal in the area and the implications that this has. For example, in this process of exploitation, changes in the ecosystem of the region have been perceptible, to the point of causing significant transgressions and injuries to the right to water of the inhabitants without having been mitigated to date.”* The judge therefore states that the impacts have to be understood at a different scale than the one proposed by the company and accepted by the ANLA, so to expand its reach to include the whole coal extraction process up to its transport by train and then by boat through the harbour, so to perceive the changes that it causes “to the ecosystem of the region”. Changes that will then impact the inhabitants’ right to water.

To help the decision and understand this scale-issue, the court asked for the opinion of experts, who pointed out missing perspectives in the impact evaluation assessment provided by the company: “the healthy environment will be affected in a way that has not been assessed in terms of cumulative, synergistic and residual effects. There will be a deepening of impacts, many of which have gone undetected, with the eventual configuration of environmental liabilities and damages due to ignorance, negligence or failure to manage an impact.”* The lacking analysis of cumulative and synergetic impacts (types of impacts which will be further discussed later in this chapter) are designing an issue relative to the spatial scale (the spatial extension but also the characteristics of what should be included, namely the other industrial projects in the ‘area’ from the same company as well as from other companies) as well as to the types of relations that the considered elements (with contestable frontiers between them, that is whether they are actually one or many, related or separated, and to which extent) can have between and among themselves in relation to the generation of environmental impacts. Besides, the residual impacts could make reference to a type of “under the radar” scale in terms of visibility (because it is argued that they are attended), as well as to the impacts that will *reside* over a temporal scale that is not contemplated. Finally, as the judge considers that the already existing affectations due to current and previous coal exploitation should be taken into account, he also shifts the temporal scale of its analysis, thus not only focusing on the future exploitation and extension but also including in the frame past events with already tangible consequences.

According to the court, coal exploitation has three major negative environmental effects: the use of water (and therefore the scarcity that it causes for others in a region where water has always been a delicate issue), the atmospheric contamination (through exploitation and transport of the coal) and the extermination of ecosystems (through removal of vegetation to make space for the open-pit mine). Those three aspects are all understood as having a localized geographic origin, physical characteristics, a particular relation to a context and, most importantly, a specific dynamic relation with other places or beings that relate to the connections that are understood to exist between the place of activity generating the impact and other ones. Each of them

could therefore be seen at different scales that depends on how are characterized those parameters by the different actors.

The court then takes the particular case of the contamination of the air, which origin is considered to be the exploitation of coal, to show that it affects the community. Although the contamination is lower than the limits established by the Colombian law, it is above the limit established by the World Health Organization, which is the reference to determine if it can affect the health (something that the Colombian law doesn't claim to do, besides putting some standards), and the exposure is permanent (notion temporal scale but also of temporality linked to the continuation or interruption of events) in the context of health risks due to the exposure to a specific element) and that an exposure with those two characteristics (intensity and temporality) is recognized a health risk that can cause specific illnesses (the expert cited by the court explains that this is demonstrated by putting into relation evidences of the possible effect on health of the presence in the air of specific particles with the specific exposition to those particles that the communities are subjected to). The analysis is therefore based on the linking of a particle with its demonstrated risk of negative impact on health when certain thresholds are exceeded (a level of concentration over a certain time), itself linked to standardized thresholds (and the variation by taking into account and comparing national thresholds with those of international institutions), an actual concentration in space and time (based on dispersion models, measurements or observations, each of which does not give the same results nor is done by the same actors), populations with a particular right, an administrative modification of the licence which opens to impact assessment, and finally with the fact that the populations concerned have complained within the time frame required.

This demonstration thus challenges existing spaces of calculation and management dispositifs by relying on enquiry and control dispositifs allowing the conjuration of multidimensional scales for the establishment of equivalences and comparisons, themselves leading to the delimitation and stabilization of events and facts linking to both health issues and their legal formulations. The use of standards produced by an international institution in this context reinforces the findings of the analysis on IPBES that international organizations can not only influence controversies in a top-down way through their policies, but that their work and recommendations can also be used by actors at all levels in the context that matters to them in order to forge themselves argumentative grasps. In this case, universal claims on human health are therefore used to challenge the national standards that are applied to specific projects. Interestingly, a disjunction between different types of observations were also noted by the regional authorities, indicating that, while it's possible to observe carbon dust in the school, inexplicably, the monitoring station just outside it registers normal levels of particles. Thus, knowledge of the existence of carbon dust is not a fact that exists independently from the means of elaborating it through measurements and observations, as well as their valuations and their tallying.

On the basis of what precedes, the court inferred that "the effects of the coal on the region" go beyond the area of direct influence that was presented for the project of extension of the harbour, that the extension projects of the mine and the harbour should be analysed jointly, and that the Plans of Environmental Management that the company have to design to have its activities authorized should be "a measure of protection of a healthy environment in general and not only in respect of a specific area"* . While the project of the company is claimed to be located, the ruling force it to also consider a more diffuse general environment, thus refusing the reduction of its preoccupation to a specific area arbitrarily separated from the 'rest' so to be considered as self-contained.

The court also puts forward the problem of “disproportion of the impacts” on the communities, disproportion that is the cause of the complaints from the community. Although it is not stated to which standard this disproportion relates, it could be understood that it relates to a scenario in which the impacts would either be not be *noticeable* or in which they would be proportionate to a specific benefit. Another type of scale relation is therefore introduced here (through the conjuration of new scales), in which the current ‘situation’ could be thought in relation or relatively to, or more generally in conjunction with, an implicit counterfactual scenario, used as a reference, in which the affectation would have been ‘proportionate’.

The judge finally concludes that “it is evident that people, fauna, flora, water, soil and air resources are being contaminated by coal particles in the area inhabited by the communities located in the Malla Norte and Media Luna areas by the company Carbones del Cerrejón Limited due to emissions coming from Puerto Bolívar”*. There is thus a affectation (general impact) due to contamination (specific impact) due to particles (specific type of physical element) of carbon (even more specific, indicating the likely origin), *on* a number of human and non-human beings (generic types), as well as water, the floor, and the air (i.e. the basic “elements”, which doesn’t seem to mean that water and floor only matters because of their impact on the beings, unlike the air that is called “air resource”) *up to* (spatial extension) the communities that filled the complaint *by* the company *because* of emissions *coming from* their specific harbour activity. As the court considers this makes the contamination caused by the company in this area “identifiable”, and that the expansion of the harbour “goes with” a rise in coal extraction, then there’s a “close relation” between the expansion of the harbour and environmental problems in the region.

In the end, while the judge talked about the different definitions of territory and the difference for indigenous communities, it is not at all the argument on which the ruling is based. Actually, even indigenous groups that might contest the epistemic domination of the spaces of calculation they oppose, and who may call for an epistemic decolonization, do not necessarily fight in court on this ground. There are indeed limits to what can be redefined in the courts, and they may require elaborating arguments within the modern episteme and ontology for them to be receivable.

The judgement was finally favourable to the demanding communities, by considering them as actually being within the area of influence of the harbour extension project, which should have given them the right to a prior consultation. This historic ruling affirmed the right to all communities in the zone of influence (widely extended, since it was now going from the port to the mine) to a "post-prior consultation" and compensation for damages. As I was doing fieldwork at the ANLA, I met some employees who were going to the area to organize meeting with the communities that would count as “participation”, and were puzzled by this ‘post-prior’ process, which came too late for effectively allowing the communities to reject the project or be in a position to negotiate meaningful compensations. During this participation process, and in an attempt to influence it, the company gave fishing boats to some individuals of the communities, leading to dissension among them. While the actual compensations were not yet defined, Gilbert et al. (2021) concluded in their paper *Incommensurability and corporate social technologies: a critique of corporate compensations in Colombia's coal mining region of La Guajira* that the gifts formed a strategy of division and were demonstrating the incommensurability of the (social) compensation programs with the damage caused by the mining industry. The Comptroller General of Colombia also critiqued numerous decisions of the ANLA relative to the licensing or follow-up of the activities of the mining company over the years. There may thus

be a long way for the historic ruling to become historic transformations for the communities suffering for the impacts of the mine for decades.

8.5 Making and contesting scales

One issue regularly pointed out by groups opposing projects and in the environmental justice literature is the discrepancy of the repartition of the impacts and benefits of a project, in geographical, temporal, ontological and social terms. In other terms, the implementation of projects creates problems of distribution, redistribution, displacement, as well as of differentiated visibilization, of impacts and benefits. Those repartitions involve the internalization and externalization of particular impacts and benefits by the production of scales including differentiated actors and actants on the basis of categories which are themselves the product of differentiated valuations. Thus, one of the objectives of taking into account different perspectives is to ensure a “better balance between individual and aggregate well-being, sustainability and justice, across multiple dimensions and scales”, as expressed in the draft of the IPBES assessment on values¹⁹³.

Kurtz (2003) puts forward the concepts of “scale frames and counter-scale frames as strategic discursive representations of a social grievance that do the work of naming, blaming, and claiming, with meaningful reference to particular geographic scales”. For her, the actors can make use of scales as analytical spatial categories, as scales of regulation, as territorial frameworks for cultural legitimacy, or as means of inclusion, exclusion and legitimation. Not only the choice of scale matters, but also how different issues and arguments are understood to relate and bound to different scales as well as to how different scales can possibly be articulated. Moreover, with regard to their strategic attempts of transformation, actors are in a multipositionality, that is that they position themselves simultaneously at different levels, since shifting scales allow them to shift their political resources and forms of mobilization (Boulay 2019). Thus, scales can not only be produced and played with by actors in diverse ways according to their perceptions and interests (Cash et al. 2006), but the fact that a change of scale or of level can reveal or allow to observe different and sometimes even contradictory patterns becomes absolutely central when considering the role that scales are playing in the disputes among actors for the production of arguments, but also as tangible material and experiential realities.

For Boulay (2019), a level of observation and analysis illuminates certain realities as it occults others, allowing for example “to grasp certain inequalities to the detriment of others, which would only be visible at another scale”. This visibilization of inequalities can include shifts in temporality (by considering future generations for example) but also in spatiality (when it is for example considered that the poorer part of the population disproportionately affected by pollution in their neighbourhoods, which cannot be seen at the level

¹⁹³ In the draft SPM of the IPBES assessment on values (IPBES 2021), it is expressed with regards to questions of justice around large-scale projects that “the question therefore is not whether large dams can be built or large-scale mining be carried out without any adverse socio-environmental impacts, but whether the inclusion of marginalized values (whether instrumental, relational or intrinsic) and values of marginalized people, and more inclusive approaches to incorporating knowledge in the design, appraisal and decision-making on such environmentally disruptive projects, can lead to a better balance between individual and aggregate well-being, sustainability and justice, across multiple dimensions and scales”. It is to be noted that draft assessments are normally not to be quoted but, regardless of the final approval by the IPBES’ members, this extract nonetheless shows the relation made between an adequate assessment of impacts of large projects and the inclusiveness of “marginalized people”, even if the efficiency for bringing justice of their approach through the question of values, and not of political relations, power and capability to actually put forward the diversity of divergent scale-making projects, can be questioned. See <https://ipbes.net/values-assessment>.

of the city but only appears when the effect of particular environmental pollution is discriminated between smaller units of analysis), as well as other types of scales allowing the identification of particular thresholds and thus the production of categories.

The three interacting modalities of transformation described by Chateauraynaud & Debaz (2021), and which are catastrophic or sudden events, events resulting from strategies of the actors, and the convergence of series previously unlinked, are also either the product or producing the reconfigurations of scales defining the material reality as well as the meaning and expected consequences of a particular situation. This thus transforms the relations between elements and milieux but also the chains of causality and the relations between the past and the present, forcing to create new versions of the future. As they observe and are taken into the frictions caused by the interaction of heterogenous milieux, the actors not only take into account variations of scale, but they also produce and conjure scales as they interpret the causalities linking events and processes. Events or infrastructures considered to be 'local' can be perceived as being a much more widespread phenomenon, but they may also be considered to require finer analysis, to be looked into deeper or on the contrary to rethink what was thought to be broad into something narrower. Those scale transformations thus operate as reconfigurations of the types of actants, and of their properties and of the relations between those actants, that have to be taken into account, and of the ways those properties and relations can be valued.

One of the ways through which facts and values are made indiscernible is therefore the fact that facts are both producing and the produce of the conjuration of scales as processes of valuation. When invisibilized or naturalized, scale-frames can thus become a form of perceptual hold. The conjurations therefore aren't only of the scales but of the scales and of the 'what is scaled' at the same time. The scales and the 'what about' of the scaling are both defined by and through this relation of intra-action. Seen this way, the coherence they achieve is a form of cobecoming of the grasping of a particular milieu 'taken as', that is not a milieu seen through the lens of a scale but which existence and performativity is intrinsically linked to the conjuration of a scale.

Since the different scaling processes can lead to potential transformations of the relations of power, actors are therefore competing to for the joint definition of problems and scales. Moreover, and besides the attentiveness to a multiplicity of scales and levels, processes and dispositifs do not have the same degree of scalability, nor are desired by all actors to have the same degree of scalability or nonscalability. Indeed, for Anna Tsing (2012) "it takes hard work to make knowledge, landscapes, and projects scalable. What I have tried to show is how that work, by its design, covers up and attempts to block the transformative diversity of social relations". The property of scalability of projects and processes therefore becomes an integral part of the issues to be resolved and of the disputes that may occur between actors. Nonetheless, Tsing (2005) also considers that "not all claims and commitments about scale are particularly effective. Links among varied scale-making projects can bring each project vitality and power. The specificity of these articulations and collaborations also limits the spread and play of scale-making projects, promising them only a tentative moment in a particular history".

While areas of influence may seem to only be observational scales, they emerge in fact from the dialogic relation between observations and analysis of consequences of particular activities. According to Sayre (2015), the concept of scale may refer to either size, that is an observational-epistemological matter, level, which can be observational or operational or both, and relation, that is an ontological statement producing qualitatively distinct material consequences. Nonetheless, while specific restricted uses of scale may allow classifying them

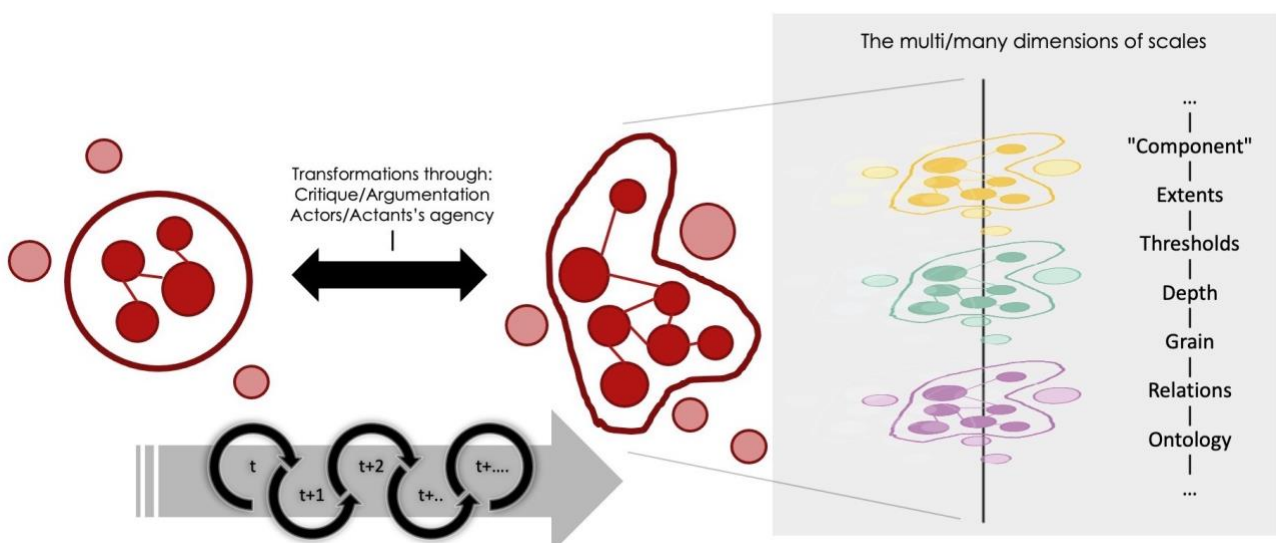
as such, and that this distinction can allow perceiving what they refer to in particular moments, it appeared that the scales deployed in the EIAs and used to describe the areas of influence are simultaneously observational-epistemological, operational and ontological matters.

When EIAs are produced, many impacts are considered by the companies and many other could be considered as not being considered, according to a number of valuation and (in)visibilization processes that are also scale-making projects. When impacts are 'considered', it can be only for certain periods, to a certain extent, from a specific perspective, in a specific web of relations and with specific epistemologies, providing a description embedded in various scales.

The very close relations that spatial and temporal scales have with other types of scales in the making of areas of influence makes them very difficult to be considered as independent. It is indeed the very careful articulation (and conjuration) of all those dimensions that can bring into being the resulting scale, and the fact that it can be drawn on a map shouldn't let think that it is then reduced only to a spatial unit at a given time. Indeed, it appears that the areas of influence as scale-making projects are not just a two-dimensional spatiotemporal extents but are multi/many-dimensional, and not only because of their division in mediums and components, but because they also have edges, depths, thresholds and grains, are selective and constrained as well as the product of specific ontologies and perception of the relations and interactions between the milieu.

The area of influence that is defined in the EIA is therefore often contested by actors who consider that the delimitation does not adequately represent the impacts that might, have or will occur and that they are therefore not adequately handled. This is especially true when some people consider that they might suffer an affectation that has not been recognized although it could have been with an adequate assessment. But it can also be that the affectations that they are perceiving or foreseeing are not part of the EIA as a normative instrument, due to current political ontologies that render them invisible or political decisions not to include it. Like in other environmental controversies, many impacts do not exist until some actors work to render them visible, through critical processes using creative dispositifs and argumentation related to their wider political struggle to shift the scale so that it includes the type of affectation they want to become acknowledged, its origin and what is affected.

Figure 47: Interdependent reconfigurations of scales, actants and relations.



As the diagram of the Figure 47 shows, scales' shifts implies the inclusion of new actants or perspectives on their behaviour or their relations. This scale's reconfiguration leads to a reconfiguration of the actors/actants and of their relations as well, and those reconfigurations should therefore be seen as interrelated. Some actors might therefore have diverging interests to see certain scales brought into being, and work toward the conjuration of those that are most relevant to them. Actants might also induce scales reconfigurations, like it is the case when what was only a risk becomes an actual disaster, for example.

8.6 Ecosystems scales and valuations

As the analyses presented in various sections of this thesis are showing, the actors were constantly confronted to problems of identification and valuation of the ecosystems, whether at the generic level or in relation to specific areas. In many cases these problems had to do with the triple identification and description of areas 'themselves' (the challenge being both with regard to what is in a specific place than with being able to produce delimitations and categories), of their context (including defining what elements could be eligible to form a meaningful context), and of the relation between the two. I will now briefly summarize how the examples which were previously given were related to the bringing into being and discussing particular scales.

As recounted in Chapter 4 (see section 4.5.2), the subfactors of compensations for each ecosystem type presented in the Manual, and which are the ecosystem representation in national protected areas, their rarity, their remanence, and their annual transformation rate, all involve seeing the particular type of ecosystem considered through lenses formed by the consideration of a diversity of scales and specific levels. They involve for example perceiving the geographical relations of particular elements, their integration into administrative instruments, their history and dynamics, etc. Those scales are both necessary to define the properties of the ecosystems and shaped by the intention to bring out those properties, making that both scales and properties are co-conjured.

Maps representing ecosystems at the national level were often considered to have the defects of being both based on incomplete information and to be too rough due to a very coarse scale. The result were that decisions had to be taken on the basis of information provided by the map which was considered to be of low quality and, with regard to the making of the maps of ecosystems, which is used to represent the compensation factors, numerous actors complained about the lack of details and the uncertainty it caused in their practice. The issue was considered coming from the mismatch between the scales that were used to produce the available information and the scales that are considered adequate for the task at hand, but it was also one of congruency between the map and the territory, as the quality of the information linking the two is defined by both a level of detail and a level of uncertainty. Nonetheless, another person who worked in producing this map said it was a balance between the available information, the way this information was produced and thus the level of detail they were considering to be able to allow themselves to represent. Indeed, representing details about which they didn't have certainty would have created more uncertainty than there was already. Depending on the aim of the information displayed under the form of a map, the uncertainties were considered to be potentially due both to a scale that is too large and to a scale that is too small. Thus, at both ends of the scale spectrum was lying uncertainties, even if for distinct reasons, and both had to be taken into account when considering the adequate levels of description.

Besides, the idea that it should become as precise as possible comes from the fact that the map of ecosystems also assumes the scalability of ecosystems, that is the fact that fundamentally their nature does not change depending on the scale to which they are considered. Ecosystems are therefore in this case assumed to have an intrinsic nature independent from their size and not based on a set of relations extending further than what can be taken into account in a minimum unit of analysis.

Importantly, two significant exceptions have been made to the aim for precision. The first one concerns the number of ecosystems represented on the map and to which a factor of compensation has been assigned — number which, as recounted before, has been reduced by shifting from ecosystems to a particular type of biomes specifically designed for this purpose. This therefore shows the interplay between three different types of scales (or even more if we consider the ways the subfactors are made as well as their relation to the types of scales and the levels relevant for designing, assessing and implementing the compensations) in the possibility to relate a particular point on the map to a particular ecosystem. Secondly, it was noted that the whole country area is represented as being of one ecosystem or another, regardless of the current state of the particular areas depicted — in particular if they may be agricultural fields or have been ‘artificialized’. This was because areas were considered as ‘having’ an ecosystem, or were assigned a ‘potential’ ecosystem related to what was considered to be there ‘originally’, thus involving other types of scale operations.

Apart from the identification of the ecosystems, numerous difficulties expressed by actors regarded the categorization and valuation of particular areas according to their vegetation cover or what surrounds them. For example, ‘transformed’ ecosystems are those considered degraded or which vegetation is “secondary”, whether because of a natural growth or following a plantation. Other times, ecosystems which weren’t considered to have particular ‘intrinsic’ importance could be valued with regard to their potential of becoming or to the fact that they may be linking areas of importance. Ecosystem services were also a way for valuating ecosystems, but the problem was that each “service” has a very different materiality and an existence which significance largely varies according to scales and levels.

8.6.1 Valuating ecosystems in 'context'

Beyond the scales of analysis, and of accounting for the impacts and compensations, what also seemed to matter were the scales of implementation, that is the scales at which concrete actions will have to be performed, and which are meant by actors when they talk about having to “enter the territory”. As expressed in different sections of the present dissertation, a central issue encountered by practitioners of compensation was the application of a theoretical normativity to particular cases and places. In particular, the problem was to adapt something general, a one-size-fits-all type of guideline, to an incredibly large and complex variety of cases. Between each of them, what seemed to change was the nature of the project and of the particular areas impacted, but above all the differences came from the relation of those areas to their “context”. One specialist of compensations for example explained how a particular context could change the ways a particular compensation should be imagined:

Puede que una compensación de 100ha sea mejor en un sitio y una compensación de 1000ha sea de otra forma en otro sitio, aunque sea el mismo ecosistema y la misma subzona hidrogeográfica, pero a partir de ciertos valores puede tener sentido declarar áreas protegidas, con valores inferiores declarar áreas tan pequeñas puede no ser buena herramienta y sea más efectivo hacer corredores de

conectividad, etcétera. El tipo de medida de compensación debería ser diferentes, contexto-dependiente y tener todo bajo la mejor información disponible. (...) Lo que pretendemos a una escala general, eso nunca va a reemplazar el trabajo de campo. Lo que podríamos hacer con esta información, a escala 100.000 etcétera, es decir que ese territorio parecería requerir sobre todo restauración y que la mejor restauración parecería estar ligada en este corredor que une dos bloques, y esa puede ser la propuesta que haga la empresa, pero tiene que ir a campo mirar cómo es el tema de la propiedad ahí, y mirar también cómo están las dos partes que se pretenden conectar, etc. (Humboldt1)

The expert expresses how measures of compensation should be “context-dependent”, and decided “with the best information available”, since actually the context will completely orient the valuation of the different alternatives, potentially even reversing what would be assumed to be preferable when thinking abstractly. The expert then described how the ‘best information’ can actually come from the interplay between different scales and levels of information seem to be a sort of cross-pointing, in which each seems to potentially help understand the others, but that only a meaningful movement of back and forth between them could actually help gain an understanding of the situation. Therefore, scales and levels can be as much interrelated in terms of the production of meaning and valuation than a particular area is with its context.

An ANLA employee, commenting on a project which had been presented during a meeting by the company, also balanced the adequacy of the compensation as the guidelines were indicating with what the analysis of the area seemed to call for:

El proyecto de ayer, ellos tienen un lote que la gran parte del lote está en el ecosistema afectado pero tiene una intervención de otro ecosistema, obviamente ahí entra también el criterio técnico profesional. Si yo le digo a la empresa: “no, no lo hagan todo el lote sino que esta partecita de lote quítela y vaya y búsquelo en otro lado”, lo que yo estoy haciendo es fragmentando la compensación, que técnicamente es un error craso. Y en realidad, en la zona en la cual se estaba trabajando allí en otro ecosistema, o que se estaba proponiendo, es una zona realmente pequeña, que de hecho incluso, al hacer la reinterpretación o la caracterización del área escala 25.000, es posible que incluso en teoría ese ecosistema existente allí no exista, porque pues las áreas, las unidades ecosistémicas van apareciendo de acuerdo a la rigurosidad con la que yo haga la construcción de las mismas: la escala y los insumos que utiliza. De pronto ni siquiera existe ese ecosistema, no es 100% seguro, habría que hacer una caracterización detallada porque es una porción realmente corta de ecosistema, no es un ecosistema grande, continuo, era un parchecito, usted lo vio allí. Entonces decir: “no quite el pedazo de ese parche”, y más cuando el objetivo de la compensación de ellos era dar continuidad a un corredor para una especie de fauna; entonces cortar el corredor porque no es el ecosistema exacto, eso no tiene sentido técnico la verdad. (ANLA11)

The employee comments that the decisions taken according to what the Manual indicates considering the definition of ecosystems at the levels of details available would actually become meaningless at other levels. Indeed, they say, the decision could be taken on the basis of the existence of an ecosystem which may not even exist at another level because, they say, they depend on the sources of information and the scales considered as well as the rigour with which they were considered.

On the other hand, the expert considers that some decisions could be guided by what the Manual would imply could be equally considered to be technically erroneous, because while the Manual only focuses on specific areas, the technician has to take into account what surrounds it, and how it relates to the area itself and helps valuating its appropriateness. The distinction that is made between what the Manual proposes and actual implementations could be related to the difference between actions done or dynamics observed *in vitro* versus *in vivo*.

During my fieldwork, I heard and was given numerous examples of valuations of specific areas in relation to elements external to the area ‘itself’, relative among other things to their similarities, differences and to their spatial or temporal distance. I already recounted how one employee of the ANLA described the “absurd” situation which was obligating an oil company to do a compensation of a few hectares in the middle of “a matrix of intensive agriculture”, a which therefore hadn’t “any chance of going anywhere”.

After dwelling into what could be understood as an impact that should be compensated in areas not considered as obviously having to be compensated, not with regard to their naturality but the type or age of the vegetation covering it, another ANLA employee told me, in a way that was somehow reversing the preceding examples, how usually denigrated ecosystems may still be considered useful:

En alguna vez, cerca a Cali donde hay unas zonas que son enormes extensiones de cañaduzales solamente, y por ahí van a pasar una línea eléctrica que las intervenciones que hacen no son tan grandes, o sea, la compensación pues es la plata que le den al señor por tumbarle una hectárea de caña, ¿sí? Ecosistémicamente eso no está pues... Seguramente cualquier persona encontrará un servicio ecosistémico en el cultivo de caña y seguramente lo tiene, pero decir que esas millones de hectáreas de caña estén dándole un servicio así ambiental, pues no mucho, más económico, el ser humano es parte del ambiente, pero digamos que más social, más beneficio hacia el componente... hacia el medio socio-económico. Hay proyectos que sí pueden tener de pronto un área de que ha sido adaptada para ganadería, pero que tiene un contexto regional muy natural y que aun cuando esta zona sea ganadera, tanto el tipo de uso del suelo apto, aptitud de suelo, es favorable para que se regenere. El Plan Nacional de Restauración establece que esas zonas pueden ser aptas para regeneración, para restauración y, además en el contexto se puede ver como una... que esa zona aun cuando sea un potrero para vacas tiene o puede brindar servicios de conectividad, como... no sé, como más o menos sin entrar a la profundidad, pero más o menos como puede ser el caso de la reserva Van Der Hammen¹⁹⁴, que tanta zona ocupa actualmente, y que el alcalde actual dice que “esos son sólo potreros”, y los ambientalistas dicen que no, que “eso tiene un beneficio ecológico grandísimo”. Habría que entrar a mirar los estudios a ver quién tiene razón, pero digamos que esas son las consideraciones que hay que tener en cuenta dentro de los territorios no naturales, para ver si efectivamente se encuentra que sí estaba prestando un servicio, y que puede ser afectado por la realización del proyecto, pues se pone la compensación. (Humboldt1)

While the theme of what creativity can do to technical reasoning emerges again here, the issue is described as the problem of assessing the ecological importance of areas like large monocultures or pastures. Some ecological services can therefore potentially always be found, but the interest of a specific area doesn’t only lie in the area itself, but on what it brings to the other areas around it. The valuation therefore depends on what is included in the description, like the humans or the fauna, but also on the scales considered and what is considered to be the potential of the area. But this can also be controversial: for example, in the case of the mentioned reserve, the relation of proximity to the city was an important parameter, whether for those wanting to urbanize it or for those wanting to protect it. Nonetheless, and as we will further see, the expansion of the spatial and temporal scales do not necessarily allow to produce a wider assemblage favouring the expansion of the relations being valued, but can on the contrary sometimes be used to minimize the importance of an area.

¹⁹⁴ The Van Der Hammen Natural Reserve is situated in the outskirts of Bogota and was created in the year 2000 but Enrique Peñalosa, the Mayor between the years 2016-2019 aimed at authorising its partial urbanisation, generating controversies around its ecological value.

Despite the expressed frustrations, the Manuals of compensation indicate that the ecological equivalent area chosen for the compensation has to have an equal or better “landscape context” than the impacted area, even if that is not always possible. They define this landscape context as the connectivity of the studied ‘fragment’ with other ‘fragments’ with natural vegetation cover. It is in practice the ratio of natural cover within a 500 m-wide fringe around the studied area, and thus results in the attribution of a score between 0 and 1. Values closer to 1 represent a “better” landscape context, which shows that it is not a neutral evaluation. It is therefore a way of valuating a particular area through the consideration of its “context”, which in this case extend conventional up to 500 m, regardless of the particular distribution of the natural areas in the fringe, and which therefore implies to level up the geographical scale while also articulating it with other scales, like those allowing to perceive the naturality of an area and to evaluate density.

The importance of considering the context highlighted by the experts, either by using a “professional technical criteria” or by applying the landscape context formula, was also acknowledged in the document describing the indicators of effectivity of the compensations (Instituto Humboldt & The Nature Conservancy 2019), since their success were said to largely depend on the “good health of the landscape”:

Los proyectos de compensación no son ajenos a las dinámicas regionales de uso y afectación de los recursos naturales y de la biodiversidad. Lo anterior impone un reto mayor a las compensaciones, pues las ganancias esperadas de biodiversidad dependen en buena medida de una buena salud en el paisaje.

Lamentablemente, una gran proporción de los indicadores propuestos hasta el momento por los planes de compensación consultados o por los documentos guía (ejemplo: Plan Nacional de Restauración) no son específicos a las dinámicas de preservación y restauración de los sitios de compensación, especialmente aquellos relacionados con la calidad del agua y la fauna. En este sentido, los indicadores del Sistema de Evaluación y Monitoreo a la Efectividad de las Compensaciones Ambientales en Colombia deben ser lo suficientemente sensibles para evidenciar cambios generados por el (los) proyecto(s) de compensación(es), o que en conjunto permitan discriminar los aportes de la(s) compensación(es) versus los aportes de las dinámicas externas.

The relation of dependence of the compensation to their ‘context’ expressed by the authors express in this extract is considered to be a real challenge for the success of the compensations themselves, which are therefore at the mercy of landscape changes independent of the will of those implementing the compensation. But their concern is also related to the way this may contaminate the evaluation of the success or failure of a particular compensation, since it may be based on indicators which may actually be more determined by the context than by the state of the compensation area itself and regardless of this context. They therefore hope to be able to find or design indicators which may be as much incentive to the “contributions of external dynamics” as possible. Nonetheless, and as expressed in Chapter 4, the ability to operate this discrimination wasn’t equally considered in all situations and by all actors. For example, companies wanted to be able to demonstrate the relation between a compensation failure and changes in the landscape, while not necessarily in the case of a success; and national authorities were more interested to assess the compensations ‘in themselves’ as well as to understand the contributions of the compensations to the dynamics of the landscape and to national indicators. As the section on areas of influence showed, while practically everyone agrees that limits should be put on how far impacts are considered to go, the issues started to appear when it has to be delimited, first in terms of direct measurement, and secondly where (or when) the chain of causal transformations has to be interrupted.

While the examples taken above bring attention to the more reticular features of the ecosystem and of the transformations considered, it also reveals a tension between attempts to generate some ecosystems connectivity for the benefit of biodiversity and producing isolation for allowing the ‘just’ evaluation of the success of compensations, both having to do with careful activities of scale and frontiers-making.

Besides the contextual difficulties, the expert of the ANLA quoted above was not blaming the Ministry for having developed an instrument which presented flaws, considering both the difficulty for norming a technical issue in a diverse country and the necessity to give generic guidance:

Esas son fallas cuando usted... Hay que entender al ministerio: cuando usted desarrolla un Manual de compensaciones, entra a tratar de hacer normativa, a tratar de meterles normativa a un tema muy técnico, y lo está haciendo para todo el país y no es... Y en un país como intertropical como Colombia, no es lo mismo estar en la Guajira que estar en el Amazonas, entonces de pronto si usted hizo el ejercicio muy juicioso, incluso el piloto en la Guajira, en el Amazonas, se le va a comportar completamente distinto. Entonces obviamente hay una directriz que hay que mantener, pero estos casos tan específicos y tan puntuales... (ANLA11)

While the employee of the ANLA insisted on the necessity to keep guidelines, a representative of companies that I’ve interviewed was on the contrary advocating for allowing more “innovation” and “creativity” in the design of compensations having to adapt themselves to very distinct territories:

[Hay que] no enfocarnos tanto en este momento a seguir sacando normas y pensando si se compensa, si no se compensa, sino empezar a implementar y a medir y a crear modelos, porque son miles de modelos, son miles de maneras de acercarnos, no es lo mismo hacer una compensación en la Amazonía, que en los Andes colombianos, no es lo mismo hacer compensación con una comunidad étnica en la Guajira, que hacerlo en el centro del país, entonces esa misma compensación pues requerirá por parte del empresariado y por parte de las autoridades también una apertura a la innovación, a la creatividad, porque pues los territorios son muy distintos.(ANDI1)

While multiplying the models and opening possibilities were considered to help the implementation, as we will further see this was also considered undesirable by those who aimed at rendering the compensations scalable both ways, and in particular to be able to produce aggregated information about them or to link them to wider goals.

8.6.2 Compensation scales

In the compensations themselves, many other types of scales are involved beyond the ones allowing the commensurability between impacts and compensations.

I showed in Chapter 4 that other types of environmental compensations existed in Colombia before the national adaptation and adoption of biodiversity offsets. Since those compensations are not exclusive, the same area can thus be perceived, acknowledge or taken into account as a collection of trees, or as being part of a larger set of areas of forest reserves, or as a specific type of ecosystem, whether actual or “potential”, or as being characterized by certain biodiversity parameters. What is important to note is that as the view changes between those compensations and what they put forward as matter of concern, the spatial and temporal dimensions are not transformed (at least in a first approach to the definition of impacts not involving issues of cumulativity and connectivity), but only the nature of what is measures within a particular area. Indeed, even the multiplication of trees, as considered in the compensation for forestry use, do not make a forest nor an

ecosystem: the question is not one of size or threshold, but of ontological transformations themselves involving the transformation of scales used to describe and perform valuations. I've also described how researchers advocated adopting a "landscape scale perspective" for the valuation of offsets (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013b), so to articulate a particular compensation (that is to include it into a 'wider' frame, or build connections between it and other preoccupations involving means for their comparison) with "landscape-level conservation goals", which would transform in the same movement the compensation as one element among others that should contribute to reach these goals.

In Chapter 5 we saw the many different types of criteria that are set up for deciding the location of the compensation, including the mandatory belonging to the same hydrographic sub-area, and among other ones were ones of history, potential, condition, relative position, relation to other areas, inclusion into various types of categories or administrative zoning, as well as more pragmatic considerations of accessibility and cost of restoration. Each of those criteria thus depends on the fixation of a particular scale, inspired by an existing one or designed ad hoc, so to allow putting into perspective and into relation, so to value, the impacted area and those considered for the implementation of the compensation.

The conjuration of adequate scales is also particularly important in the demonstration of the additionality of compensation measures, and particularly controversial for the demonstration of averted loss, which is one way to demonstrate it, as well as of the no net loss of biodiversity. As expressed in Chapter 3, researchers agreed that 'averted loss offsets' could have a no net loss results which wouldn't be the same if it was considered at the level of the landscape or of the project. The establishment of the baseline necessary to do the comparisons also involves contentious articulations of spatial, temporal and ecosystem degradation qualification scales. This issue was discussed during a meeting at the ANLA between employees of the institution and employees of an environmental consultancy who came to have some advice on the compensations:

Consultant 3: Por ejemplo, si nuestras acciones son de preservar un bosque galería, o una zona rondaría que tiene pastos y bosques, y estas zonas son como bajo algún instrumento de protección, allí la adicionalidad aplicaría?

Employee of the ANLA 1: Allí les digo que es bien interesante de como explica la adicionalidad, porque proteger el bosque que ya...

Consultant 4: Pero hay un tensionante, si.

Employee of the ANLA 1: Si, lo pueden explicar pero deben hacerlo con fuerza porque los bosques de galería tienen una normatividad que lo protege y ya. Y pues digamos que...

Consultant 4: Si pero si en la zona.. Hay pastos, hay fragmentación, pues la adicionalidad seria de volver a...

Employee of the ANLA 1: Lo pueden hacer, pero si yo cojo una imagen de 1960 y el bosque galería es el mismo, y no hay ningún tensionante mas que el hecho que al lado hay pasto, pues...

Consultant 4: Pero si muestro que hay deforestación?

Consultant 5: Una demostración temporal de lo que fue intervenido.

Employee of the ANLA 1: Si, eso puede ser, eso son el tipo de cosas que hay que demostrar.

Consultant 5: Si por ejemplo es un bosque muy antiguo y ahora en 2019 ya esta fragmentado, o...

Consultant 4: Entonces habrá que utilizar la información del IDEAM, pero esta a una escala 100 000, que son las tasas de deforestación de Colombia.

Employee of the ANLA 1: Pues habría que ver como le da. Si pueden hacer un multitemporal con mapas del IDEAM. (...)

Chap8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations

Consultant 5: Pero si el bosque galería por el cual podríamos hacer un multitemporal, digamos de 30 años, y [muestra que] tiene el mismo ancho digamos, pero cuando uno va y lo ve de frente son tres o cuantos campanos con una altura de treinta metros pero atrás no hay nada. Así que considerando que si esta el ancho, pero al nivel estructural y composición es diferente.

Employee of the ANLA 1: Pues por esto que hay que hacer la caracterización para que demuestran que es diferente en estructura y composición.

The beginning of the extract shows that the demonstration of additionality implies both extending to other beings, other geographical and temporal scales and to understand ‘what is’ not in a fixed way but as something dynamic, that is by operating variations in the temporal scales considered. Within the defined temporal scales, different qualities of what is observed also have to be compared. The discussion therefore focuses on ecosystems scales and the fact that an analysis which may show that an area may appear to be of the same size over time doesn’t necessarily imply that it is actually similar when looking at other properties, that is when comparing by using other scales of descriptions or changing the scales of observation and the type of data on which the descriptions and comparisons are based.

The problems relating to the measures of compensation largely had to do with the possibilities of restoring degraded ecosystems at least to the level of the ones impacted. For some of my interviewees, considering that it is possible is actually unrealistic. One cited for example a study showing that for ‘simple’ ecosystems like wetlands, only 70% of functional attributes could be recovered, and probably much less for more ‘complex’ ecosystems. On the other hand, the possible recuperation was also largely considered to require an amount of time much larger than the time of the compensation. In the worst scenarios, the full recuperation would not happen before a very long time, and in the best one it could be possible somewhat rapidly but there still would be a wide ‘time lag’ between the impact and the moment at which the functions of the ecosystem were recovered. Since those comparisons imply putting the compensation in a wider frame involving shifting scales, they were therefore crucial in the way they were valued and had deep consequences on the ways to perceive their adequacy or success.

8.6.3 Connectivity

Various people that I’ve interviewed expressed that they had noticed a clear increase over the last decade of analyses of biodiversity (in general, but also in terms of impacts and compensation) “at landscape scale”, which allow doing analyses of ecosystem fragmentation, integrity and connectivity. On the other hand, some technicians doing EIAs told me that they like connectivity studies but don’t have time to do complicated stuff either. Issues of fragmentation and loss of connectivity are also more and more analysed with regard to the impacts that projects may have. When found significant, in theory companies may also be obliged to find ways to compensate these impacts. In what I’ve been able to observe, this didn’t seem to occur frequently. Nonetheless, the fragmentation of ecosystems that would have been caused was one additional motivation for the ANLA to reject the Cañafísto hydroelectric project, as explained by one of the ‘biotic’ experts of the ANLA who assessed it:

Para mí es muy diferente cuando, por ejemplo, hay proyectos que alrededor tienen como suficiente cobertura vegetal, entonces las especies pueden migrar o desplazarse a uno u otro, teniendo en cuenta como las cercanías que existen entre esos parches, porque los parches en algunas ocasiones eran

distantes y había bastante fragmentación y la conectividad se iba a perder en una cifra bien significativa. Entonces por eso no, pues no comparto como que, ese argumento de que iban a hacer la compensación de la conectividad. O sea, lo que planteaban ellos era como “vamos a desconectar como todos unos circuitos y vamos a hacer un núcleo”, pero que va a quedar aislado de todo eso y no me va a lograr hacer esas conectividades. Entonces si yo estoy generando una desconexión de coberturas vegetales, lo que tengo que hacer es conectar coberturas vegetales para poder compensar. (...) Entonces esa conectividad no la lograron, sin embargo ellos argumentaban que alrededor del embalse se iba a generar una conectividad porque iba a haber esa franja de protección, pero es que esa franja de protección es una obligación que ellos tenían (...) y tampoco se me iba a conectar directamente con esa extensión grande que ellos estaban planteando para la compensación, entonces el impacto como tal de fragmentación que me desconectaba coberturas vegetales no iba a ser nuevamente reconectado. Entonces la compensación ahí al final no, no se da desde el punto de vista funcional, sino solamente en cuanto a un número en áreas: “yo impacto 1000 en áreas y pongo sólo un área de 9000”, por poner un ejemplo, pero esos son cantidades, más no es la función. Entonces aquí lo que no están compensando es la función que es esa conectividad que requieren las especies, tanto la flora para su reproducción, bien sea por el aire o por la dispersión de semillas por aves, por murciélagos, por abejas, para la polinización, o para los movimientos, los desplazamientos para la fauna terrestre. (ANLA5)

This extract shows the competing valuations of the compensations, according to a context brought up by the conjurations of particular scales, between considerations of gains and losses in terms of size and of connectivity. These valuations also depend on the assessment of the impacts in terms of fragmentation, because the generation of connectivity is usually not required when the fragmentation isn't considered as being an impact, and more largely, as the expert explains, in terms of functions that the impacted ecosystem was considered to provide.

Since studies of fragmentation and connectivity are becoming more common, the companies are more and more proposing to orient their compensation activities by taking these parameters into account, and in particular through the creation of corridors. Nonetheless, an ANLA compensation specialist told me that, while the corridors looked very cool in the presentations done by the companies, when looking at their specs they were too often just about doing no more than a bit of pasture vegetalization. The same expert also pointed that companies were getting confused in their proposals, because they were focusing too much on the corridor itself, while the benefits that should be demonstrated, through the use of indicators, were those for the connected places and not the corridor itself.

Similarly to what was demonstrated about the analytical use of scales, it was demonstrated in the field of ecology both that patterns depended on the levels of observation and that observations at different levels may even appear to be contradictory (Sayre 2015; Wiens 1989). This also clearly appears in the analyses of connectivity and fragmentation, since they rely entirely on the definition of what is said to be connected or fragmented, with regard to what processes (and in particular for what type of fauna for the analyses of connectivity, since each of them has different modalities and patterns of displacement) and considering which scales and levels. Indeed, as zooming out shifts the perspective it also allows seeing new relations and might favour their valuation, and therefore rendering justice to some particular processes or beings, but this may be at the expense of details which are the expression of more local relations. The problem is thus to be able to perform and maintain multilevel views and to articulate them.

The concept of connectivity radically transforms the ways of perceiving the consequences of the degradation of ecosystems and the relations and dependencies between areas. Indeed, at “larger scales, natural

ecosystems are heterogeneous and connected by flows of species, energy and resources. This connectivity governs how changes in biodiversity affect ecosystem functioning at various scales” (Isbell et al. 2017). Moreover, the relation between scales of the same type and between different types of scales can be quite complex and sometimes counter-intuitive, since in some examples that studied fragmented habitats, “ecosystem productivity is more dependent on species richness across sites than within sites” (Isbell et al. 2017).

Connectivity and fragmentation thus relate to questions of density and to qualities of what is in between areas which connection is evaluated (or within of the areas which fragmentation is evaluated). There is therefore not only a matter of scales, but also the definitions of interiorities and exteriorities between which relations will be qualified. Since they are based on the theory of graphs, which contain nodes of varying sizes and links of varying strengths, and that can be done at different scales, and on network analysis, fragmentation and connectivity assessments shows again that scales that may appear to be purely spatial may actually have to do with the scaling of processes or properties which ‘spatial’ behaviour and scalability may largely vary, thus transforming also the nature of the scale considered and of what a particular level is supposed to mean and encompass.

This shift in scale allow the redefinition of the importance of an area, since it may now be relative to its current or potential importance in a connected system. The areas important for the “connectivity” at different scales will then aim at being protected or included in a ‘portfolio’ of areas to be restored in priority, for example through the orientation of compensation activities in it. Echoing the motivations and assumptions which guided the design of the four subfactors of compensation, the growing importance of connectivity analyses goes along the wider acknowledgement of the degrading state of ecosystems connectivity. Indeed, not only many ‘natural’ patches remain ‘connected’ only through fragile lifelines that must not be cut, but it is also conservation-wise more ‘efficient’ to weave new connections between vastly disconnected areas than to extend the sizes of natural chunks. This thus changes the ways of perceiving ecosystems by creating new ecosystems ontologies transforming relations of continuity and discontinuity, and of closeness and distance, while transforming in the same movement their modes of valuation.

8.7 Frontiers and scales of the mitigation hierarchy

One of the key methodological instruments, implemented for various decades in the EIAs guidelines to try to achieve an overall reduction of the impacts of projects, is the “mitigation hierarchy”, which mantra, solemnly repeated every time it is presented, is that the projects should aim to first avoid most of their impacts, and if it’s not possible they should then minimize them, then mitigate those remaining, and finally ‘only’ compensate the impacts which couldn’t be avoided, minimized or mitigated. With regard to biodiversity, this compensation is what should allow to avoid a “net loss” of biodiversity and, for the most morally ambitious or perhaps the least shy in conceptual terms, to obtain a “net gain” in biodiversity, a concept which was more recently rebranded as the aim to be “nature positive”.

As expressed in previous chapters, a common critic of the mitigation hierarchy is that more impacts than expected end up at the end of the process having to be compensated, or ignored, instead of having been avoided, reduced or mitigated. Indeed, even for authors working to develop and improve biodiversity offsets, the

mitigation hierarchy is often not considered to be adequately applied, to the point that they can consider that “there is broad agreement among scholars, scientists, policymakers, and regulators that in most mitigation frameworks the first and most important step in the mitigation hierarchy, avoidance, is ignored more often than it is implemented” (Villarroya et al. 2014). But when does the mitigation hierarchy starts and what happens in the blank area that precedes the first step of the mitigation hierarchy? This anterior step is interesting because it concerns the definition of what it is considered that the impacts will be, as well as the moment in which the mitigation hierarchy intervene.

Currently EIAs and the mitigation hierarchy that they promote are focused only on a specific project that a carrier wants to develop: “EIA practitioners seek to minimize impacts through the application of the ‘mitigation hierarchy’: avoid, minimize, restore, or offset. In theory, this process provides a mechanism to balance development and conservation; however, in practice, EIA is applied on a project-by-project basis, which can underestimate the cumulative impacts of multiple current or projected development projects within an area and also limit flexibility in applying the mitigation hierarchy”(Kiesecker et al. 2010). Therefore, the analysis that aims to reduce the impacts is only carried out within a specific frame that is the project in itself, a project that has specific goals (coal mining for example) and localized (this mine that is projected in this place). So what is often called the opportunity of a project, that is whether the project in itself should be carried out considering its type and objective, generally do not enter within the reasoning of the mitigation hierarchy, nor does for example the question of temporality. The ANLA itself isn’t considering this question of opportunity, since it should theoretically be examined upstream from the licensing process, for example at the moment when a mining permit is delivered. The characteristics of the mitigation hierarchy process thus relates to the definitions of the limits of a ‘project’, and to who gets to define it.

8.7.1 Before and around the mitigation hierarchy

When the implementation of a project is considered, the mitigation hierarchy can also be applied by doing a ‘diagnostic of alternatives’ of the project which, depending on its type, can focus on different aspects:

También hacen diagnostico de alternativas para las represas por ejemplo pero sin embargo ahí funcionan diferente, porque ya cuando sale a la situación una represa es una licitación del estado, de la unidad de política minero-energética. La entidad decidió que ahí se hace y lo que te permite variar son técnicas constructivas y técnicas productivas, pero no sitios. El Estado digamos se conserva el derecho de decidir que licite y que no, que pone a disposición de... En este caso en la unidad de política energética dice pongo a disposición para recibir ofertas en esta zona de una represa de 100 metros de altura, se presentan una serie de empresas, gana una y es así en la que le presenta a la ANLA el estudio de impacto ambiental, etcétera.

- A cual momento interviene la jerarquía de la mitigación entonces?

Cuando ya lo lícito, una empresa se ganó la licitación, presenta el estudio de impacto ambiental y cuando se lo conceden le permiten construir. (Humboldt1)

As described here, the alternatives can be envisioned and considered within different scopes, or degrees of freedom regarding the project, depending on the preestablished constraints for each type of project, localization and technical characteristics.

For linear infrastructures, what is usually considered is the analysis of alternative routes, through what is called a “diagnostic of alternatives”. This is because in this frame of analysis what matters, in many cases in which something has to go from one point to another regardless of the route taken, is just somehow linking the two points on the map, and what is in the middle is just a means for the connection and not an end in itself. In this case the various options are compared, with the inclusion of an alternative scenario “without project”, not so much to decide if the project should be done or not but to have a reference that will also include impacts that are considered likely to happen even without the project, and that can therefore be subtracted from the impacts that can be seen in the other scenarios. So the analysis of alternatives, for a given road or pipeline project that will anyway have to go from point A to point B, is the only case in which the mitigation hierarchy expands somehow its focus further from an already designed project. The scales that are interacting in this type of analysis are then not only geographic but also administrative and economic.

At the other end of the mitigation hierarchy spectrum, another issue comes from the characterization of what should qualify as “residual impacts”, that is the impacts that were not possibly avoided, reduced or mitigated and that should be compensated. Indeed, how to even know that an impact that hasn’t occurred was actually “avoided”, that is that it may have existed in an alternative scenario but not in the current one? In a way which resembles the demonstration of additionality of the compensations, projects can present in their EIAs a comparison of impacts occurring with and without the project, but this methodology is far from being convincing:

Si bien en la actualización de la Metodología General para la Elaboración y Presentación de Estudios Ambientales [publicados por MADS y ANLA] se establece como requerimiento una evaluación donde se identifiquen y valoren los impactos potenciales en los escenarios sin y con la ejecución del proyecto, las metodologías sugeridas para esta tarea (*i.e.* Battelle-Columbus, cualitativa de Conesa, EPM, entre otras) son solo aproximaciones a valoraciones cualitativas, que si bien dan una idea integrada de los impactos, no cuantifican realmente el efecto y magnitud sobre la biodiversidad de cada uno de ellos, o del efecto acumulativo de varios de ellos. Adicionalmente, estas metodologías no permiten definir con certeza (dada la propia incertidumbre de los paisajes y dinámicas ecológicas) cuáles de estos impactos son residuales, y cuáles son evitados, prevenidos o mitigados, por lo que los cálculos de pérdidas de biodiversidad son imprecisos y con una alta carga de subjetividad. (Instituto Humboldt & The Nature Conservancy 2019)

When I asked an employee of an environmental consultancy working for companies about the limit of the impacts that should be considered not only in the EIAs, but also in terms of responsibilities of the companies, they considered that studies and decisions at the level of the territory or of the region should actually be carried out by the government, because companies couldn’t practically do it:

Yo pienso que más allá de la área de influencia del proyecto, ya son dinámicas de... dinámicas regionales, que eso sí debería ser y qué pensaría yo, que es un tema que le falta a las autoridades ambientales en Colombia, hacer esos estudios de dinámicas regionales hasta dónde cada uno de los lugares del país permiten o no permiten, establecer proyectos. Eso no lo hace uno a nivel de consultor, ni a nivel de empresas privadas, sino realmente lo debe hacer la autoridad, de decirme: “vea, esa zona está tan impactada, esa zona está tan intervenida, que yo como autoridad le tengo un estudio donde me dice: ‘yo no le permito tener algo más ahí’, o sea, no hay una oferta ambiental del territorio, el territorio es tan sensible ya a cualquier otra intervención”. (...) Eso pensaría yo que a ese lugar debe evolucionar, porque es cada gobierno el que tiene que tener el conocimiento completo de su territorio. (CONSUL2)

While the evaluation of impacts at a larger scale and of the “environmental offer” of a given territory was thus considered to be the responsibility of the authorities. And indeed, the ANLA considered adding in its Evaluation Manual, intended for its employees, that the viability of the projects should be established “by taking as a reference the current regional situation¹⁹⁵”. During the public consultation regarding the modification of this Manual, an association of companies commented that they worried that regional analyses may rely on assumptions that have no support, and therefore recommended the environmental authority to limit itself to the analysis of impacts within the area of influence of the project. This comment was rejected by the ANLA by putting forward its responsibility to “manage the environment and renewable natural resources within its area of jurisdiction and promote their sustainable development” and that, while the carriers of projects have to submit an environmental assessment for the area of influence, the ANLA have to perform an analysis of those impacts at a regional level. They nonetheless acknowledge that those analyses should render explicit the relation established between the project and the regional impacts, but didn’t explain the apparent contradiction between considering simultaneously that a project has a limited area of influence and that its impacts can go beyond this area of influence.

Shifting from the impacts to the interests, a person working for a coal mining company, which intended to operate a coal power plant along with a new mine they were trying to license, shows how the valuation of their operations deeply relies on a scale-making project connecting their interests to those of “the country”:

Mirá, Colombia siempre va a necesitar, vamos a necesitar más energía, entonces este proyecto es importante porque está vinculado a la central térmica independientemente pues que Hidroituango haya tenido problemas o no; lo de Hidroituango es más reciente, por lo que el proyecto adquiere mucha más importancia, pero los proyectos de generación de energía siempre van a ser pues como proyectos de interés nacional, por decirlo así. (MiningComp1)

Going even further, a partisan journalist who was unhappy about the decision of the ANLA to reject a hydroelectric project, expressed his criticism by referring to the proper scales which should have been favoured, a commentary which is therefore also in itself a scale-making project, instead of the ‘wrong’ scales used by the experts who did the evaluation:

Actualmente la inversión en mitigación, compensación y recuperación de los impactos ambientales y sociales de los proyectos hidroeléctricos alcanza el 20% de la inversión. Esos montos de inversión y el mero paso del tiempo hacen que al cabo de unos pocos años los impactos negativos desaparezcan y prevalezcan los beneficios. Una vez en operación, los proyectos hidroeléctricos son amigables ambiental y socialmente. De esto pueden dar testimonio las gentes de Santander, que hoy están orgullosas de su Hidrosogamoso, y los habitantes de las regiones donde están instaladas las hidroeléctricas que abastecen normalmente el 70% de la demanda del País. Se equivocan los técnicos de la Anla si creen que al impedir la construcción de Cañafisto se garantiza la preservación del bosque tropical seco del Cañón del Cauca y de las especies que lo habitan. De lo que sí hay certeza es que esa decisión producirá una serie de impactos ambientales negativos en otros sitios, otros tiempos y sobre otras personas. Colombia necesita la energía que ya no producirá Cañafisto. Si en ese mismo sitio se desarrolla, como lo ha sugerido en gerente de Isagén, Ingeniero Fernando Rico, un proyecto de presa más baja de unos 270 MW, el País habrá perdido irremediablemente 666 MW de su potencial hidroeléctrico. Si la Anla niega la licencia del Cañafisto Pequeño, se perderán los 936 MW del proyecto

¹⁹⁵ ANLA, Comentarios a propuestas normativas y documentos técnicos de licenciamiento ambiental (Manual de Evaluación de Estudios Ambientales), 2015.
http://www.minambiente.gov.co/images/Atencion_y_participacion_al_ciudadano/consultas_publicas_2016/Respuesta_comentarios_consulta_publica_Manual_de_Evaluacion_041016.xlsx

original. De alguna forma habrá que reemplazar esa generación y cualesquiera sean las alternativas, no estarán libres de impactos. La decisión sobre Cañafisto está sustentada en una evaluación miope espacial y temporalmente, concentrada en una porción limitada del territorio, una pequeña fracción de la población y un horizonte de unos pocos años. Con esta decisión el ambiente gana poco o nada, el País pierde mucho y se fortalecen los ambientalistas radicales, como los de “Ríos Vivos”, que hostigaron sin tregua el desarrollo de Amoyá, El Quimbo y Sogamoso y que actualmente la emprenden contra Hidroituango¹⁹⁶.

In this excerpt, the journalist conjures and transforms scales again and again in order to produce argumentative effects, which I will detail now. He first starts by considering the actions of mitigation, compensation and recuperation in terms of monetary investment, and then to relate it to the total investment of hydroelectric projects. He then somewhat additions this investment to the passing of time and, through considering a larger timeframe, the relation between positive and negative impacts become reverted. Reducing this timeframe to only what comes after the construction, he considers that the projects are socially and environmentally friendly. He then relates this fact to the people living in the regions of the project, who “can testify” of it, while finally positioning itself at the level of the country, who’s benefiting, and the production of energy, to which hydroelectric energy participate in a given share when considering the ‘total’ of the energy demand.

Considering the decision of the technicians of the ANLA, the journalist considers it unwise, because the seemingly avoided impacts are in fact going to be only displaced, when looking at the ‘wider picture’, “in other places, at other times and on other people”, showing the scale palette with which he is juggling. He then extends again his view to compare the rejected project to another potential one, comparing their capacities of energy production and what it means ‘for the country’ (which is a scale that can potentially embed or relate to many other) in terms of potential of energy (which is a figure relating to many assumptions of scales, technologies and futures) and irremediable loss of this potential (which therefore assume qualities of temporal irreversibilities). The assumptions are clarified when considering that “somehow that generation will have to be replaced”, and that this replacement cannot but have the same impacts (thus making an equivalency between quantities of energy generated and of impacts produced).

Going back to his scalar fundamentals, he then expresses that the decision by the ANLA is “spatially and temporally myopic, concentrated in a limited portion of the territory, a small fraction of the population and a horizon of a few years”. For him the problem is that both spatially, temporally and socio-geographically, the decision relates to the use of too restricted scales (or more precisely to too low levels) of analysis, while his wiseness comes from an ability to encompass ‘wider’ scales. This is particularly interesting since this argument is also used by people opposing projects, even if in seemingly contradictory ways because arguments are actually not just produced by ‘scaling up’ or down, but by the types of scales used and how they are used to create new relations. Indeed, as we will further see in the section focusing on the hierarchy of the mitigation, considering ‘the country’, for example, can dilute the negative impacts but also allow for the consideration of a wider range of possibilities. The journalist finally weights the decision by attempting a commensurabilization of what the ‘environment’ didn’t ‘gain’ with what the ‘country’ certainly ‘lost’, seemingly not only in terms

¹⁹⁶ Luis Guillermo Vélez Álvarez, De la espléndida realidad de Sogamoso a la frustración de Cañafisto, 27 abril de 2017, El Mundo. <http://www.elmundo.com/noticia/De-la-esplendida-realidad-de-Sogamoso-a-la-frustracion-de-Canafisto/351149>.

of energy but also in terms of favouring “radical environmentalists”, possibly impacting both political scales and balances and again impacting future potentialities.

This example shows that questions of regionalization, cumulativity, fragmentation and mitigation hierarchy exist as formal concepts in the normativity and institutions, but that actors also manipulate scales to produce reasoning and arguments in ways that can bear strong similarities with them. These transformations of scale nonetheless concerns discriminately the various effects that projects may be considered to have. This interviewee working for the ANLA was critiquing the fact that companies were often not correctly addressing the environmental impacts, especially with regard to mitigation, but that would be at least understandable if the region was benefiting from the inversions:

Te pongo un ejemplo, y pasa con muchos [proyectos]: ellos llevan 30 años allá con la mina, ¿sí? ¿Que queda ahí en las zonas? Quedan los huecos sin recuperar, sin hacer una reconfiguración paisajística, y sin un manejo, y [las minas] se volvieron lagunas y ya. Donde ellos explotaban antes el carbón no hay más, y de pronto [hay una] población flotante y migraciones y unos barrios subnormales en [la ciudad mas cerca], pues con gente, porque gente iba en busca de otras oportunidades de empleo... Pero que haya un manejo y que pues digamos que esa oportunidad genere un desarrollo económico en la región! No la dio. Y lo mismo si vamos a hidrocarburos: en los proyectos de hidrocarburos muchas multinacionales vienen, extraen el hidrocarburo y qué le queda a la región? Los impactos. Pero que se quede un desarrollo en la región! (ANLA8)

Here the environmental impacts are put into relation with economic benefits that are not only localized, but also spread among the population, so that the town nearby do not end up with underdeveloped neighbourhoods. Contrarily to the preceding quote, the focus isn't on the need for coal “for the country”, or even on the energy for the region, but on other necessities that people are considered to have locally, and that the ANLA expert not only admits but also considers legitimate to solve, even if it has to be done via the implementation of a coal mine. Actually, there are impacts that are considered normal in the development of a project, and they are thus seen as being inherent to the project and unavoidable once the project goes ahead, and that may be acceptable as long as the benefits show up.

Indeed, when asked during the interview about whether the ANLA should evaluate the opportunity to allow a new coal mine, the same person also put in perspective the existence of a particular coal mine with what Colombia as a country could be able to do, or should be doing, when taking into account what the rest of the world is doing:

Pues el tema que sea una mina de carbón, pues de alguna manera... Pues a nivel mundial todavía se sigue explotando carbón ¿sí? Se había presentado unas metas de suprimir la explotación al 2020 y después eso ya no se cumplió, ¿sí? Y después en todos los continentes, ¿no? Entonces pues digamos que en ese sentido no, eso todavía no lo evaluamos a ese nivel. Sí sabemos pues que hay un impacto muy alto por el uso de carbón como combustible, y toda la huella que genera, pero ahí no, digamos que todavía no lo tenemos en cuenta, porque pues es una condición que no es sólo de Colombia sino del resto del mundo. (...) Es claro que si hay un impacto sobre el cambio climático, pero también porque digamos un país con bajos recursos y un país subdesarrollado como Colombia, pues digamos que tendría que pagar el precio del cambio climático, pues de restringir el uso de la explotación de carbón, cuando los otros países desarrollados si lo hacen y ellos sí están generando toda esa huella de carbón, incluso con proyectos más impactantes y más grandes, porque tendría que ser sólo Colombia, o sea, yo vuelvo y me enmarco a nivel mundial, o sea, eso tendría que ser un acuerdo de todos, ¿sí? (ANLA8)

But this relation between what is political and what is not in terms of decision is also part of the reflection that some of the main environmental NGOs have with regard to their strategic (or ideological) positioning along the gradient of critique, and therefore the types of activities they will favour. For example, a person from TNC, NGO which participated in the design of the Manuals, explained to me, “off the record”, that their positioning was to be “non-confrontational”, that is that they weren’t directly confronting the issues but trying to be more politically consensual (or non-political) and to find solutions within the existing ‘system’ or dynamics, by opposition to Greenpeace I was told, even if this is arguably only relative. One example, which seemingly created numerous internal arguments, was about whether they should work on infrastructure projects in the Amazon region. Some employees were saying that it should be off-limits, while others, including the management, advocated for allowing the region and its inhabitants to “develop”, but by accompanying it so that their action would allow to reduce the impacts. This description is truthful to the one made by Robert Gottlieb (2005) as he analysed the transformations in the 1970s and 1980s, due to the pressure of the conservative government and the fossil fuel industry, of the American environmental movement, and in particular the environmental NGOs, into a less hostile group aiming at fostering change through consensual green leadership.

For the employee of TNC mentioned above, the mitigation hierarchy is also about what shouldn’t be touched, and not strictly a project-by-project view, as their colleagues were advocating. This example gives a good example of the divide between a more global mitigation hierarchy which would ‘avoid’ and ‘reduce’ whole projects or activities, on the basis of political and ethical decisions, and another one more reduced and less confrontational. In this case, different scalings are thus both political statements and the result of diverging processes of valuation.

This debate echoes discussions aiming more generally at articulating projects with territorial planning. For example, a dialogue was initiated in France between researchers and private and regional institutions about the possibilities to “organize the mitigation hierarchy at the level of a territory”, so to overcome issues linked to the insufficient knowledge of ecosystems, the difficult access to land and the “governance” of compensation areas, but also to address the insufficient avoidance and reduction of impacts during the application of the steps of the mitigation hierarchy¹⁹⁷. Indeed, a change of the level at which the mitigation hierarchy is applied, or the scales taken into account, is considered to potentially allow to change the way that the steps previous to the compensation are considered.

Going in the same direction, Guillet et al. (2019), in an article wondering “what biodiversity is targeted by avoidance measures”, recommended more anticipation as well as the integration of the mitigation hierarchy into territorial planning. Interestingly, they also considered that the avoidance step is essentially distinct from the other steps of the mitigation hierarchy, since it isn’t about doing but about not-doing, that thus “avoidance will not find simple solutions in methods or techniques like it is the case for reduction and partly compensation”, nor it can be equally visibilized. While they considered that this will require the implication of new actors into “decision-making arenas”, discussing the avoidance involve that a distinct political process be allowed to take place to avoid other attempts of technicization. Moreover, controversies around what type

¹⁹⁷ See the one-day seminar « *Eviter Réduire Compenser* » : *et si on l’organisait au niveau d’un territoire ... ?* organised at the IRSTEA in Grenoble, France on October 18, 2018, by Lucie Bezombes, Stéphanie Gaucherand, Camille Ollivier and Thomas Spiegelberger.
<https://ercterritoire.sciencesconf.org/>

of actions qualify as avoidance and what qualifies as mitigation are already taking place, numerous measures presented by projects in France as being avoidance were considered by researchers to be in fact measures of reduction (Bigard, Pioch, and Thompson 2017), even if this qualification cannot be but non-consensual.

Guidelines on the application of the mitigation hierarchy issued by a working group gathered by the French Ministry of the Environment (Commissariat Général au Développement Durable 2013) described four modalities of avoidance relating to the opportunity of the project as well as geographical (displacement of the project or avoidance of areas), technical (best technical solutions) and temporal (adaptation of the schedule) parameters. Each of those modalities thus involves taking into account and doing valuation of the project or aspects of the project within distinct scales.

The circulation between avoidance of measures within projects or avoidance of projects as wholes and their central place in the arguments that actors may have may be observed with a particular intensity during the debates organized when considered pertinent previously to the licensing of projects and that are called Public environmental hearing (*Audiencia pública ambiental* — organized by the ANLA) in Colombia or Public debate or Consultation in France, where they are organized by an independent organism. This is even more true when the polarization of the opinions is the most acute, in particular with regard to technologies about which an intense critic developed over the years, like showed the heated discussions about oil exploitation projects based on fracking technologies¹⁹⁸, for which the precautionary principle (and thus the avoidance) is often put forward.

Another specificity of the mitigation hierarchy as currently framed, that is applying only at the ‘level’ of a particular project, is that what is before or above it does not involve the responsibility of the companies since it relates to scales that are not those of the companies, and to decisions that are considered to be done (or should be done) “at the level of the society”:

Realmente los que menos pagan en compensaciones son las vías, que son los que tienen los impactos indirectos más altos. Pero no se contabilizan porque obviamente, que es otro problema filosófico entre las legislaciones de los países, tú no le puedes cobrar a un señor que construye una vía por algo que él no es responsable, por qué: “si llenó esto de colonos, esa no es mi responsabilidad, eso es responsabilidad del estado, ellos deberían controlar eso”. (...) El mismo estado debería compensar por eso, porque él está generando, abriendo una nueva zona del desarrollo, una vía pues sí se vuelve un problema. (TNC3)

While the scales of impacts seemed to determine the scales of responsibility in the delimitation of the areas of influence, in practice it is the scales of responsibility which determine the scales of impacts in terms of attribution, even if in a neoliberal economy the state can ultimately be blamed for either or both controlling too much or not enough.

In their paper *Development by Design in Colombia: Making Mitigation Decisions Consistent with Conservation Outcomes* (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013a), the authors, all from TNC, intended to apply to Colombia the ‘development by design’ methodology previously elaborated by international researchers from TNC (Kiesecker et al. 2010) and which states that decisions of avoidance should be made at a landscape scale based on conservation portfolio. In the case of conflict between

¹⁹⁸ In the case of the discussion that took place in Colombia, see for example the report produced by the Fundación Heinrich Böll, and which aimed at framing the discussions around fracking “as a matter of public policy” (Fundacion Heinrich Boll, Oficina Bogotá - Colombia 2019).

the sites of a future project and the conservation portfolio (that is a register of areas that are considered crucial for the conservation of a specific element of biodiversity, in particular relatively to one of its 'functions'), they propose the already discussed solution that the compensation factor should be raised for those areas, so that project design would (theoretically) try to avoid or minimize their impacts on those areas. But alternatively, they say, if the future project overlaps with an existing portfolio, it may be recommendable to see how the conservation portfolio could be redesigned to attain its objective (but also depending on the level and kind of objectives) at landscape level without hindering the implementation of the projected project or activities. Moreover, they propose that the conservation portfolio could be proactively designed by considering the 'costs' of each area selected and, by attributing higher costs to areas having a potential of development, the portfolio would, as much as possible, be designed in order to avoid those areas.

This system seems to be directly inspired by the logic of the compensation factor (but which generally do not have the repelling properties that are often attributed to it), but in reverse. Indeed, here they consider the cost of conservation with regard to the importance of the development of projects, with the aim of "steering the selection conservation of the portfolio away from potential conflicts". In this sense, the mitigation hierarchy would not apply to projects, which should avoid and minimize their impacts on biodiversity, but to conservation goals, which should avoid and minimize getting in the way of projects. Why is this possible? Because the conservation that is based on the assessment of a biodiversity with specific characteristics and oriented toward a goal that is the maintenance of a viability understood as a percentage of its functions.

The authors say that they did this research because they considered that there was "a need for more structured decision-making framework to determine when projects could proceed or should be avoided" and that, with the proposed methodology, "now the MADS has guidelines for proactively evaluating the compatibility of proposed development with conservation goals and determining when impacts should be avoided" (Saenz, Walschburger, González, León, McKenney, and Kiesecker 2013a).

Another aspect transforming the framing of the mitigation hierarchy and the possible relation between scales and impacts valuation was the transformation of the temporality of the obligation of submission of the compensation plan by the companies when requesting a licence.

The compensation plan was, in the first Manual, required to be submitted by the company within six months of the obtaining of the environmental licence, and therefore wasn't part of the evaluations and of the considerations leading to the decision of the environmental authority. The second version instated the obligation of presentation of compensation plans at the same time than the EIA, that is at the moment when the companies fill their application to receive an environmental licence for their project, and of starting the proposed actions within six months of the start of the approved project.

From the point of view of the institution, this transformation is a positive one, since it allows including a reflection on whether the 'residual' impacts are actually compensable and whether they are planned to be compensated in an appropriate way. Nonetheless, it may also be a way for the companies to weight in the evaluation by putting forward all the benefits that their compensation activities will bring, and therefore potentially put in perspective the impacts themselves. Nonetheless, some compensation specialists at the ANLA considered that compensations do not influence the decisions to approve or not an environmental licence, but what matter is the impacts, in an absolute way, as well as their compensability. They told me that,

if a licence is given, it is because the impacts have been accepted, and then the company happen to have to compensate them.

This shift of temporality was also considered to allow perceiving the projects as wholes and not as separate pieces, which was considered by both the companies and the environmental authority to generate more work, but was considered by advocates of this change as being more “coherent”:

Un tema que que generó bastante controversia es obligar que el proyecto presentara el plan de compensación al tiempo con el estudio impacto ambiental, eso generó un problema para los proyectos porque decían que era más trabajo y que era más inversión al inicio del proyecto sin saber si iban a tener o no licencia... O sea, yo puedo me estar gastando un montón de plata en un plan de compensación y si no me aprueban la licencia entonces perdí la plata? Pues sí, así es, le toca hacer la inversión completa y por el lado de las autoridades decían también, nos dan más trabajo o sea, tenemos que evaluar no solo nuestro impacto ambiental sino el plan de compensación, es el doble de trabajo, era más difícil pero es más coherente, o sea estábamos hablando de un solo proyecto no de pedazos de proyectos; ahí tuvimos bastantes temas críticos. (TNC1)

Despite that, people of the compensation group of the ANLA often complained that the compensations were still considered by companies too late in the planification of their project, so that not only their compensations were not well planned, but also the theoretical iterativeness of the mitigation hierarchy was rarely thoroughly put into practice.

8.7.2 Cumulativity and dilution of impacts

Another way to consider the projects at scales larger than the project itself is to consider cumulative impacts, which were often considered to be insufficiently taken into account despite their importance. Some researchers are indeed arguing that an extension of the scale of the mitigation hierarchy is required in order to better assess what they consider to be a more accurate delimitation of the actual scales of impacts. For example, in their paper, Arlidge et al. (2018) wanted to “discuss the potential utility of applying the mitigation hierarchy, widely used during economic development activities, to all negative human impacts on biodiversity”.

This evolution of the types of characterization of environmental issues, impacts or challenges was described in the 2010 report of the European Environmental Agency (2010) as being increasingly complex, and went along with the evolution of the types of policies developed. It indeed considers that in the 1970s the challenges were specific, with linear and local causalities, that in the 1980s they became diffuse, including issues of cumulativity of multiple sources at the regional level, and that systemic ones appeared in the 1990s, with complex causes and interlinked sources at a global level. The shifts in levels of geographical scale that they describe therefore not only relate to transformation of temporalities and temporal scales, but also show how much changing levels may completely redefine the perceived interactions and causal relations between different elements.

Authors of the report also expressed that a novelty of their report is that they tried to link particular challenges to “global megatrends”, which they considered to imply increasing systemic risks, since they noted the interconnection of a variety of previously unlinked risks. They therefore consider that the study of the challenges adapts to the nature of the challenges themselves, and not that it is also a transformation of the look upon the challenges which changes their nature. Indeed, while profound transformations of the issues occurred

during the 20 years they describe, it could be considered that the ways they were taken into account evolved much quicker than the issues ‘themselves’.

When considering the impacts of a particular project, the actors are thus able to link them to diverse features depending on the type of challenge they may consider to be part of. The idea of cumulativeness for example also made its way into the analytical frames of the environmental justice movements who redefined the risks to which particular populations were exposed by paying attention and visibilizing the cumulative processes and interactions between social and environmental forms of injustice (London, Sze, and Lievanos 2008). In my fieldwork, I’ve been able to observe as well that some actors intended to push companies to extend their analyses. For example, during the meeting with the people of the mine that occurred during the visit that I’ve recounted, the ‘social’ expert insisted that cumulative impacts they were considering important should be taken into account and analysed. Those concerned firstly the cumulative impact of the various projects of the region over the services that the nearby town can deliver. But the ANLA’s employee also wanted to point out the evolution of the situation of the people of the villages around the future mine site:

Otro tema que para ellos es sensible, sobre todo para Las Claras, es que se ha notado un avance de varias empresas comprando muchos predios. Y respecto al proyecto, cuando nosotros les mencionamos los predios que podrían llegar a ser comprados, ellos tenían una dependencia de esos predios porque unos trabajaban ahí, otros utilizaban esos predios en términos de aparceros, los dejaban entrar y sacar madera, los dejaban entrar y sacar frutos, y pues obviamente toda esta dinámica cambia cuando están hablando con una empresa. Entonces pues lo que está pasando es que el avance de los proyectos está quitándoles gran parte de la dinámica de sustento, porque no es económica, ya que en esos labores flexibles y en esos diálogos flexibles con los propietarios, ellos cultivaban pancoger, en términos de plátano, arroz, yuca etc. Entonces miran con preocupación obviamente y eso.. Allí vuelvo a los escenarios acumulativos, de ver cómo los otros proyectos están avanzando avanzando y si bien es un trato entre terceros, pues si hay una comunidad que esta cada vez mucho más presionada.

The impact on the village inhabitants’ capacity to access to the land around them is considered to be quantitatively cumulative, and has to do with the transformation of the areas around the village over time as well as the increased limitations of the possibilities for the people to get access to them, therefore reducing the range of production opportunities through a limitation of their spatial freedom. Nonetheless, when studies of cumulative impacts want to take into account more complex phenomena, they often become more difficult to carry out:

Los acumulativos son terribles, porque finalmente, por ejemplo, en un río, no es lo mismo una hidroeléctrica que 10, pero los impactos, se miden es a nivel de proyecto, no a nivel de paisaje, digamos ¿no?

-En el Manual no, pero en teoría sí la ANLA analiza los impactos acumulativos, ¿no?

Sí, ellos están haciendo unos estudios regionales, como para analizar qué zonas están ya más intervenidas, y entonces sí, se trata como de ver como el contexto en donde está el proyecto, como para evaluar eso un poco, pero tampoco tenemos muy buenas herramientas para saber los, cuáles son los impactos acumulativos y cómo se manifiestan, qué tanto está este proyecto afectando eso, si no tengo estudios. Ellos tampoco tienen muchas herramientas para hacer unos estudios que realmente me puedan evaluar cuál es el estado de la biodiversidad, yo no sé, en la cuenca del Magdalena, o en ciertas zonas. (TNC3)

Chap8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations

As already shown before, the study of cumulative impacts is quite recent and suffers, according to the people who have to either produce those analyses or to evaluate them, from a lack of clear methodology as well as problems of information:

Esos impactos acumulativos y sinérgicos no dejan de ser muy conceptuales y muy subjetivos, porque es que uno se basa en el estudio de impacto ambiental, que por ejemplo entregó el proyecto que ya estaba ahí, y ese proyecto y ese estudio se entregó hace más de 15 años, entonces hace 15 años no tenía la visión que tiene ahora, entonces yo no sé hasta dónde llegan los impactos de ellos realmente, si yo no sé cuál es su actividad, o sea... Entonces a uno le toca suponer, dependiendo de la identificación de los impactos que ellos dicen que tienen, como las medidas que uno atiende, hasta dónde podría llegar o no. (CONSUL2)

The difficulty for doing the analysis of cumulative is that the existence of other projects can only be taken into account inasmuch that their EIA is available and inasmuch as the information that their EIA provides about the expected impacts at the time of production of the EIA. Therefore, the person who wants to take those projects into account (and who wants in particular to take them into account ‘up to where their impacts arrive’) can only guess what the impacts they are interested in can currently be. An employee of the ANLA also told me that while they had to evaluate the cumulative impact of a particular project, they would only consider the other large projects licensed by the ANLA, and not those licensed by the regional authority or other smaller projects.

The problem is therefore that this lack of indisputable methodologies along with data of reference was making that in many cases producing solid analysis led to the production of evaluation under a regime of high uncertainty, and the chains of causalities were easily contested or transformed, which was allowing those potentially responsible for an impact to evade their responsibility by pointing toward other factors, or to a principle of cumulativity which, by saying that everyone is partly responsible, would dilute the responsibility so that no one would finally be responsible:

Eso es un poco de criterio “de experto” ¿no? es muy de criterio ‘experto’, porque obviamente no tenemos la información de cómo una vía puede afectar ciertas especies, no tengo ni idea, en Colombia, o qué significa la fragmentación de sus ecosistemas, no tengo ni idea. Entonces hay una incertidumbre tan grande, entonces no sé. Entonces estamos en sistemas muy complejos, la incertidumbre muy grande, hay otros factores, entonces el señor va a decir “mire, es que yo no soy el culpable de que se esté perdiendo esto, que hay otros señores que también están contaminando, y yo no sé”. Uno de los temas que para nosotros es súper clave, que obviamente no lo considera nadie, son los impactos acumulativos. (TNC3)

This shift from considering the uncertainties linked to the evolution of a particular aspect of one project to the problem of cumulative impacts (which are also quite uncertain) shows again the importance of choosing the right scales for understanding or revealing certain impacts but also the uncertainties surrounding the definition of scales themselves.

On the contrary to what cumulative impacts studies could lead to show, for one employee of the mine that I had visited, the impacts could seem very important locally would seem less manifest at a wider geographical scale:

Si yo voy a tener unos frentes mineros de casi 900 hectáreas y tengo que remover toda la cobertura vegetal que hay ahí, todo el suelo orgánico, el impacto va a ser muy alto pero desde el punto de vista local, si lo miras por ejemplo, del punto de vista regional, no va a ser tan alto.

Chap8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations

-Entonces, que a lo mejor no importa tanto el nivel regional, o importa?

No, es más a nivel local; de pronto a nivel regional impactaría si vos tuvieras que intervenir una reserva forestal, o tuvieras que hacer una sustracción, por ejemplo, de un área protegida, que eso se puede, eso sí tendría un gran impacto a nivel regional, incluso nacional; pero cuando son proyectos que están ubicados por fuera de esas áreas con esa categoría de protección, el impacto es más local, es local del todo. (MiningComp1)

As we will further see, this feature of pattern transformation by the change of scales or levels can even become a sort of reverse cumulativity and allow more common practices of dilution of responsibility. For example, in the case of a hydroelectric power plant, the company considered that some impacts of their project wouldn't occur since there was already another hydroelectric power plant the same river downstream:

Hubo casos que se identificaron como que el proyecto no iba a... mejor dicho, tuvo impactos que no identificaron, ellos consideraron... la empresa consideró que no, que eran ciertos impactos que ya no se generaban, y no se generaban porque estaba el [otro] proyecto hidroeléctrico aguas abajo. Entonces, por ejemplo, uno de los impactos que ellos consideraron que no iban a presentar era la fragmentación o la afectación sobre las poblaciones de peces migratorios. (ANLA5)

The company was therefore expressing that since some impacts were already done by other projects, the implementation of their own wouldn't change anything, so that, instead of seeing if the situation could aggravate itself, they didn't want to even do the analysis.

When I asked during an interview the 'physical' expert of the ANLA who worked on the coal mine project about the magnitude of the impact on the water streams that would be acceptable, they responded that it actually depends on the size of the streams, on their states, and on what is done with it, but also made more literal references to problems of cumulativity and dilution:

Lo que pasa es que ellos estaban pidiendo... ahí sí es muy difícil, ahí yo creo que no, llegar a un impacto aceptable no, no creo que es posible porque ellos estaban proponiendo unos vertimientos en unas quebradas muy pequeñas y entonces ahí no se podía llegar al aceptable, bajo ninguna circunstancia, porque las quebradas no tenían la capacidad de asimilar el vertimiento.

-Pero de una manera más general y no sobre este proyecto en particular?

De una manera más general es eso, o sea, es aceptable si la fuente receptora se pueda recuperar después de recibir el vertimiento y si no se puede recuperar, no sería aceptable.

-Y cuando dices: "se puede recuperar", qué es lo que significa? Que se vuelva igual o que puede ser un poquito diferente?

Eso se llama la resiliencia, la capacidad, la resiliencia que tenemos tanto los seres vivos, como la quebrada, que es de recuperarse después del impacto. (...) Si el vertimiento no va a cambiar nada porque el río ya está contaminado, sería aceptable y no pasa nada. Lo que pasa es que el río a pesar de que tiene unos niveles de contaminación ya delicados, y todo tiene unos usos que son unos usos, vuelvo al tema de la subsistencia, porque ahí hay extracción de oro de subsistencia, es gente que se va y está en el río todo el día, a ver si saca aunque sea un granito y le dan 20 mil pesos, ¿sí? Porque no tiene otra alternativa para su sustento y el de su familia, entonces contaminado o no, le está dando un sustento a ellos. Con el vertimiento, al verter unos caudales significativos se alteraría el régimen de depositación, de sedimentación y de transporte de sedimentos y eso podría afectar esa actividad minera de subsistencia. Hay una actividad de pesca de subsistencia: [el río está] contaminado con los vertimientos que hace la comunidad y todo, pero hay peces, y esos peces hay gente que no tienen todo el día nada más que comer y estos peces son sus medios de subsistencia. Y la agricultura: hay gente

que tiene sus cultivos de pan coger y con eso es que riegan esos cultivos, con el agua del río: contaminado o no, pero con eso sobreviven. Sí yo le pongo una carga adicional, esas actividades se van a eliminar, y entonces la gente ¿qué va a hacer? ¿Sí? Entonces no sería aceptable. El ecosistema así, todavía tiene un nivel de resiliencia, el ecosistema así como está tiene un nivel de resiliencia, pero con el vertimiento ya la perdería. (ANLA8)

In this extract, the expert put in relation numerous elements which could have appeared disconnected through shifting scales, scales which therefore become relational scales. These scales transformations are contingent on valuations of the relations put forward by comparison, contextualization and even consequentialist reasonings when the expert expresses that an impact is not acceptable because of what appears when following the chain of causalities and expanding to and valuating the impact on the communities.

8.8 Visions of the territory from the centre

Compensations can be seen or wished to be seen from diverse perspectives, and comprise for actors a variety of operations implying to both juggle with scales and be juggled by them. Indeed, when trying to understand what compensations implies for their practice and how they transform their experience, they both have to integrate their scales constraints but also articulate them with their own scale constraints relative to their particular activity or situation (whether as an employee of a company, of the ANLA or another administration, or as a person living near a project) and trying to reconfigure them so to produce not only convincing arguments, but also intelligibility, scalability and capability.

When considering the scales of the compensations, it was often mentioned by diverse actors the difficulties first for understanding what the Manual was saying, and then to see how it would play out for designing the compensations of a particular project. But the next troublesome step is when the companies have to “enter the territory” to actually implement the compensation:

Las empresas entienden cartográficamente el ejercicio, lo que pasa es que a veces ya la definición específica, llegar específicamente a las hectáreas que debo compensar. O sea, en ese ejercicio que yo le digo el ecosistema es un área relativamente grande para la cantidad de área que tiene que compensar la empresa. O sea, yo podría tener que compensar 100 hectáreas, pero un ecosistema puede tener no sé, 1000, 2000 hectáreas, entonces yo tengo una gran posibilidad en cartografía, en algebra de mapas, y eso la empresa lo entiende y lo hace relativamente bien. El problema es ya cuando tengo que ubicar las 10 hectáreas que tengo que intervenir o compensar, o las 20, o las 30, porque eso ya es entrar a territorio y buscar una persona, o un propietario que tenga el interés de que las acciones de compensación se desarrollen allí. (...) El problema es encontrar ya realmente allá en el mundo real el área donde se puede hacer la compensación. (ANLA11)

As expressed, understanding and taking decisions through maps is already quite challenging but, in the end, identifying a very specific and ‘real’ area is even more complex. After the identification, of the right area, which should be in the correct ecosystem and hydrographic zone, another issue comes with finding whether a proprietary exists and if they are interested. But while going down to these specific spatial levels, it is important not to forget to articulate temporal scales and constraints:

El dónde compensar es un reto porque no es solamente que te digan [que la compensation tiene que estar] en la subcuenca o en la macrocuenca, pero tiene que ver con la viabilidad realmente cuando

Chap8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations

llegas al terreno, ¿no? Entonces ahí hay todavía como muchos retos desde la legalidad de las tierras, o incluso el dónde puede más manejable, pero a veces el cómo hacerlo sostenible en el tiempo es todavía un reto. (ANDI1)

Echoing the issues surrounding the attribution of responsibility and the adequate levels and moments of decision for allowing particular projects or impacts discussed previously, the person from an association uniting various companies told me during the interview that climate change issues were also quite tricky, since it had both to do with seeing how to policies developed by the countries “down to the companies” and with the planification of the territories and the articulation of many actors. Similarly, they considered that the protection and management of biodiversity could benefit from the action of the companies and of the compensations, but that it was only a small part:

Yo sí creo que el sector empresarial puede jugar un papel muy importante en la gestión de la biodiversidad, pero pues tiene que ser como un conjunto de cosas, tiene que haber escenarios de confianza en donde también las empresas puedan hacer cosas con los institutos, con parques, con la autoridad nacional de licencias, tiene que haber un escenario en donde se trabaja también en políticas sectoriales y no cargarles solamente la responsabilidad de la biodiversidad a las compensaciones porque pues esto es solamente un pedacito. (ANDI1)

While this comment puts in context the scale of compensations within larger attempts to protect biodiversity, it also describes how each actor is perceived as having different roles associated to their scales of action and of responsibility.

The respective perspectives of the environmental authority and the companies lead them to perceive differently the territory, the project to be licensed, their respective obligations, the environmental impacts and the temporalities involved. While their object of focus and of analysis seem to be the same, frameworks for their understanding differ largely. For example, one of my interviewees, currently working for a consultancy but who worked both in the private and public sector, considered that there were numerous differences between the two:

Desde lo privado pues es tratar de hacer las cosas bien con el menor impacto trata como uno, sin embargo, también hay un tema de que es de productividad a través de las empresas, que uno tiene que... está todo ese tema productivo que la empresa tiene que también, no puede parar, entonces tratar de hacerlo que todo se pueda hacer sin que pare sus producciones y sus cumplimientos ambientales, llamémoslos así, a nivel de normas y eso. Y bueno, y como autoridad ambiental es distinto, es un tema de, de más cuidado, de más regulación, de más evaluación, se tiene un conocimiento digámoslo, un poco más amplio porque siempre te mandan a diferentes proyectos y diferentes sectores, entonces te da como una visión más amplia. (CONSUL2)

Even as they may both focus at some point on the same project, the view of the employees of the company is shaped so to see it through a prism of economic profitability and the role it plays in its activities, while the view of the employees of the environmental authority tends to be broader since it encompasses numerous other projects and operates on a national scale. Nonetheless, the new compensation obligations forced the companies to involve themselves in the management of biodiversity, or thus to identify and adapt themselves to the new scales and network of actors that it entails:

El marco regulatorio dio señales en donde las empresas tenían que compensar y paralelamente vimos que era una forma de llegar al territorio distinta, porque la biodiversidad te plantea canales con el territorio distintos, no es solamente llegar y operar e irme, es llegar y, para poder compensar, generar

Chap8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations

alianzas sociales, territoriales, entender cuáles son las determinantes en el territorio, cuáles son las zonas más estratégicas para la protección de la biodiversidad... O sea, es un canal, nosotros vemos la biodiversidad como un canal para hacer gestión territorial. (ANDI1)

While I was told most of the time that doing territorial management was necessary for implementing successful compensations, this interviewee expressing the point of view of companies say that biodiversity-related activities are one way to do territorial management, or through which territorial management can actually be done. As such, it thus also allows the companies to extend their network and their hold over a particular territory and use their actions not to render the territory sustainable, but to ensure the temporal sustainability of their presence and of their activities:

Las empresas son negocios en largo plazo, las empresas son en su mayoría las que representamos son empresas de largo aliento en los territorios, entonces realmente si tú no entras al territorio entendiendo cuáles son las prioridades y generando esquemas de trabajo social, generando inversión ambiental, pues realmente en el tiempo vas a ser insostenible, porque pues hace parte como del buen vecino, asentarte en un territorio, entender las lógicas territoriales, entender y tratar de hacer una inmersión digamos en eso para poder también generar desarrollo, pero también poder sostenerte en el territorio. O sea el territorio es dinámico, es adaptativo, pero pues requiere precisamente una lectura asertiva de las empresas, y ahí han habido muchos errores. Digamos que la visión que tiene la ANDI es encontrar saldos pedagógicos a través de esto, para mirar formas en donde tú puedes decir: acá estuvo una empresa y antes de la empresa y después de la empresa pudo estar mejor el territorio si no le hubiera estado. (ANDI1)

The long-term view of some companies (particularly those of the energy sector) therefore oblige them, even if they may consider that it is not their responsibility, to integrate their activities in the context of the ‘territory’ (with undefined properties and borders) in which they have their activities, obliging them to study, assess, understand and adapt to its “logical” and “dynamics” as much as to alter them.

For an expert of the ANLA, the problem is precisely that companies don’t understand that doing compensation is above all territory management, and that to do that they should reinforce their environmental department so be able to go beyond the purely technical aspects and do the actual management that is required:

Si tengo una empresa que hace vías o que hace una mina, no debería esperar que con un HSE que me haga las rutas de evacuación además me haga los planes de manejo. Yo tengo que fortalecer un área ambiental y un área ambiental que tenga capacidad de hacer gestión de territorio. Eso es: la compensación es gestión de territorio, la compensación no es entrar usted en el computador y hacer el cruce de mapas y voy, eso es una cosa técnica procedimental, pero en realidad es gestión de territorio. (...) Toda la gestión de territorio que [la empresa] hace: gestión predial, gestión social, para que pueda hacer su pozo[, tomando como ejemplo una empresa petrolera], esa misma gestión debería ir acompañando el “dónde voy a hacer mi compensación”. (ANLA11)

This idea that compensations are ‘actual’ management of the territory relates to what an employee quoted before was saying with regard to the relations that companies had to establish with the local communities as they were “entering their territory” so to develop their activity (see section 7.2.6), and the fact that companies were often behaving in a way that would be considered according to implicit social norms as ‘rude’ (even if this may be an extreme euphemism with regard to some situations). Indeed, voluntarily or involuntarily mixing up their scales and maps with the territory, they may arrive and actually treat the territory as a 1:1 map, forcing onto it a scalability that may be a form of violence. This example shows that here also the property of scalability isn’t a given of a particular process, but can actually be seen differently by actors and become a subject of

controversy, precisely because of the very distinct and very material consequences that derive from assuming a particular level of scalability.

As the examples above show, the difficulties in the understanding of the relation between a particular policy and its concrete application are not so much related to how it is simply scaled down from a large administrative or spatial scale to a more local level, but in the shifts between and articulation of the different scales and their very different material, epistemological and ontological bases and implications.

But the difficulties of the movement of ‘going down’ required for the literal and practical localization and territorialization of the compensations is also what allows at the same time to be able to go the other way, that is to generalize or compound the results of the different compensations activities:

Tiene que haber una visión proyecto por proyecto, porque cada proyecto es diferente y cada proyecto tiene diferentes tiempos, diferentes formas de hacerlo, diferentes formas de generar el impacto, etcétera. Pero el Manual hace que la puntualidad de cada proyecto se vuelva global, porque le estás apostando a unas metas de restauración y esas metas de restauración son metas nacionales, entonces ahí le estás apuntando es a metas de país, por eso se pasa de lo puntual a lo global. (TNC3)

A desire to have a clearer picture of the compensations at a national level has also been expressed to me by a person belonging to the ANLA compensation group, at least so to be able to show to the “public opinion” that compensations are actually taking place:

Nosotros tenemos que mostrar muy rápido resultados en realidad, en tema de compensación en el país, de adicionalidad, de dónde están las reforestaciones y las compras de predio, dónde están. (...) Porque pues ¿cómo vamos a tener nosotros credibilidad ante la opinión pública si eso no se ve? ¡No sabemos nosotros que somos los que estamos diciendo...! ¿sí? ¡No tengo esa información! O sea, yo digo ¿cuáles predios, dónde están?

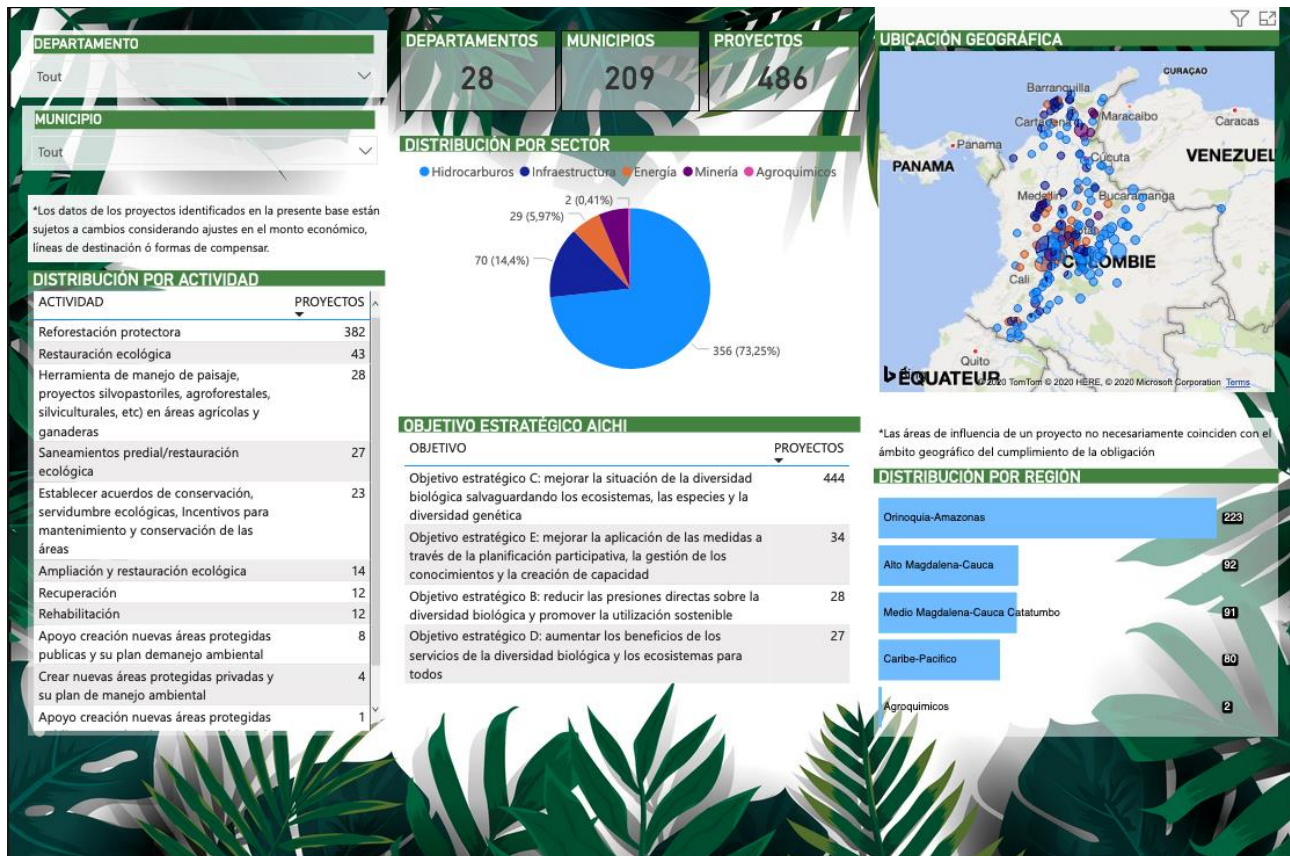
-Ah sí?

Por dios... (...) Para que la gente crea en el tema, o crea... no en el tema de los proyectos, crea en que sí hay gente trabajando en el tema de la conservación. La gente no cree en eso, la gente a veces... Si tú te pusieras a hacer una encuesta con el país [para saber] si la gente cree que se hace conservación, yo te aseguro que la gente, toda, dice: “que no, aquí no hay nadie trabajando en conservación”. Todo el mundo, la información que recibe por los medios de comunicación es que la Amazonía la están deforestando y ta, ta, ta, que el ministerio de ambiente no hace nada, la ANLA peor, mandándolo a licencias para que destruyan... Es la realidad, ¿Cómo volteas eso? ¿Cómo volteas el imaginario de la gente? ¡Tienes que informar! Si no informas lo que estás haciendo, ¡estás jodido! (ANLA12)

But beyond their concerns for the trust of Colombian in the existence of conservation activities, the same employee, seemingly a bit desperate that the efforts of so many years to implement compensations were neither tangible nor represented in a way that would allow them to embrace their concreteness with a single glance, later said to me, while showing the wall next to their desk, that they would like to see in this place a map of Colombia showing all the compensations that have been realized. They said that this map would not only allow them to develop a sense of accomplishment but also to be able to show others that their work is not in vain. Their dream finally came true in May 2020, when the ANLA published on its website on the occasion of World Environment Day (a sign of the symbol that wanted to be made of it), an interactive board with a map representing all the approved compensations to date (see Figure 48). Unfortunately, this map, although seeming relevant, absolutely does not allow to get an idea of the actions that are actually implemented and not

simply planned, and even less of the said “benefits for biodiversity” that they will bring. In a way, one could say that it completely avoids the question that is at his core.

Figure 48: Reproduction of the dashboard presenting an overview of the compensation projects which was published on the ANLA website in May 2020¹⁹⁹. It included the possibility to filter the 486 compensation projects by department and municipality, and which presented them according to their ecological activities, the industrial sector of the project at the origin of the compensation, the way they participated to a particular Aichi target, the distribution by region and finally displayed the compensations on a map. As of December 2021, the data of the dashboard hadn't been updated, showing that the maintenance of this tool is quite work-intensive, even while not aiming at representing actual actions 'on the ground'.



The desire for seeing compensations of the whole country at one sight, as well as the use of targets that, although coming from the addition of dispersed projects, and nationally accounted for, therefore show that the ongoing state-building activities are in many cases linked to scale-making projects. While it seems widely admitted that “the map isn't the territory”, in fact the map is a crucial way to grasp a wide territory and therefore, for lack of better access to it, the map is often taken, while not for the territory, at least for its faithful depiction. Actually, not only does the ‘large-scale’ view foster the inclination to take the map for the territory, but also to take the evolutions of quantitative indicators for concrete transformations, since it represents only a particular level of representation of a given phenomenon through a particular scale. Reducing a phenomenon to a single dimension can thus mask its complexity as well as misrepresent it, and can actually be done with this purpose in mind. For example, while Colombia managed to reach the Aichi target 11 on the percentage of

¹⁹⁹ ANLA, Tablero de Control - Compensación, Apuestas por la Biodiversidad, Día del Medio Ambiente - 5 de junio de 2020.

<https://www.anla.gov.co/proyectos/apuestas-por-la-biodiversidad/tablero-control-compensacion>

land protected²⁰⁰, one of my interviewees complained about the method used by the government to reach it, who decided a vast extension of the Chiribiquete National Park, even though many national parks are not fully protected, and their existence on the ground is in many parts quite intangible:

En la declaración de las áreas protegidas por ejemplo, se declara [el Parque Nacional] Chiribiquete con un millón y medio más de hectáreas sobre los tres que ya tenía. El Instituto [Humboldt] fue muy crítico en su momento en decir: “ya no hace falta seguir ampliando Chiribiquete, ya tiene una representación suficiente”, todo lo que le han hecho fama en las últimas semanas ya estaba preservado en un parque nacional del siglo pasado, y entonces toda esta ampliación finalmente lo que les permite es cumplir metas que se ha comprometido el gobierno, pero era más importante hacerlos en bosques seco por ejemplo, qué es un ecosistema sobre el cual el Instituto le ha puesto mucho énfasis, porque ya queda muy poco, ya no se pueden esas grandes declaraciones, pero hay que usar otras herramientas más pequeñas.

- Pero la ampliación era mala en tal?

Esta ampliación no hace.. Básicamente digamos el argumento del instituto sobre el compromiso que tiene el país con el Convenio sobre la Diversidad Biológica de llegar al 17 por ciento del país terrestre y al 10 por ciento del país nacional en áreas protegidas, claro declara un millón y medio de hectáreas más y subes... Pero el convenio no había dicho que el sistema debía ser completo, representativo, y eficazmente manejado. Para que sea representativo no es solamente un 17 por ciento de cualquier lugar, sino al menos un 17 por ciento de cada una de las cosas, que aseguran sostenibilidad. (Humboldt1)

While the target was reached, in terms of the total number of hectares declared protected relatively to the size of the country, its actual meaning or pertinency can largely be contrasted when including other criteria, that are actually scales of different natures, allowing to perceive further details beyond the homogenous description. Indeed, a critique that had been made to this park extension was that it was seemingly purely administrative, since the management of the areas already part of the park were quite poor, with some areas still normally used or suffering uncontrolled deforestation.

As described previously (see section 4.8.4), the definition of scales is also fundamental in the assessment of the effectivity of the compensations, and experts working on the design of the effectivity indicators told me that an important challenge was related to their scalability. Therefore, when I asked the person in charge of designing them whether and how did the indicators integrated the particular relation that local communities may have with an area which may be linked to a compensation project, even through the types of ecosystem services they were receiving from it, their response was mostly a description of what has to be lost to render indicators scalable:

Bueno pues, dos cosas. Como uno de los objetivos precisamente es que la información sea escalable, digamos que la información sobre cómo las comunidades ven la biodiversidad o lo que esperan de la biodiversidad en este sector no logramos tenerla. O sea, no se puede tener en cuenta porque no sería comparable este sitio con otro porque las comunidades son diferentes, o sea, a lo que voy es que, la percepción que las comunidades tengan sobre la biodiversidad alrededor del sitio de compensación

²⁰⁰ The Aichi Target 11 was stating that

“By 2020, at least 17 per cent of terrestrial and inland water, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.”

<https://www.cbd.int/aichi-targets/target/11>

no son comparables entre sitios, entonces de pronto no nos sirve esa información. Y lo segundo es que, uno de los criterios, precisamente lo que tú dices, son los servicios ecosistémicos de las áreas de compensación, porque el asunto es que uno de los criterios de evaluación que dice el Manual es el de servicios ecosistémicos. Pero, por servicios ecosistémicos, lo que nosotros estamos haciendo es proponiendo indicadores de función únicamente, cadenas de función, sin fijarnos en quien, si hay interesados en esa función, o si hay usuarios para esa función o no, porque si nos planteábamos indicadores de servicio ecosistémico tendríamos que, analizar es, cuántos usuarios lo usan, para qué, qué rentabilidad tienen, qué mejoras en condiciones de vida tienen por ese servicio ecosistémico, con qué frecuencia lo usan, o sea, ya cuando metemos gente, ya no es replicable ese indicador en otros sitios, siento yo. Entonces si lo dejamos muy desde el punto de vista únicamente biótico, de las condiciones bióticas de los ecosistemas y de la biodiversidad, sin considerar mucho el aspecto social de la biodiversidad para que sea comparable. (Humboldt2)

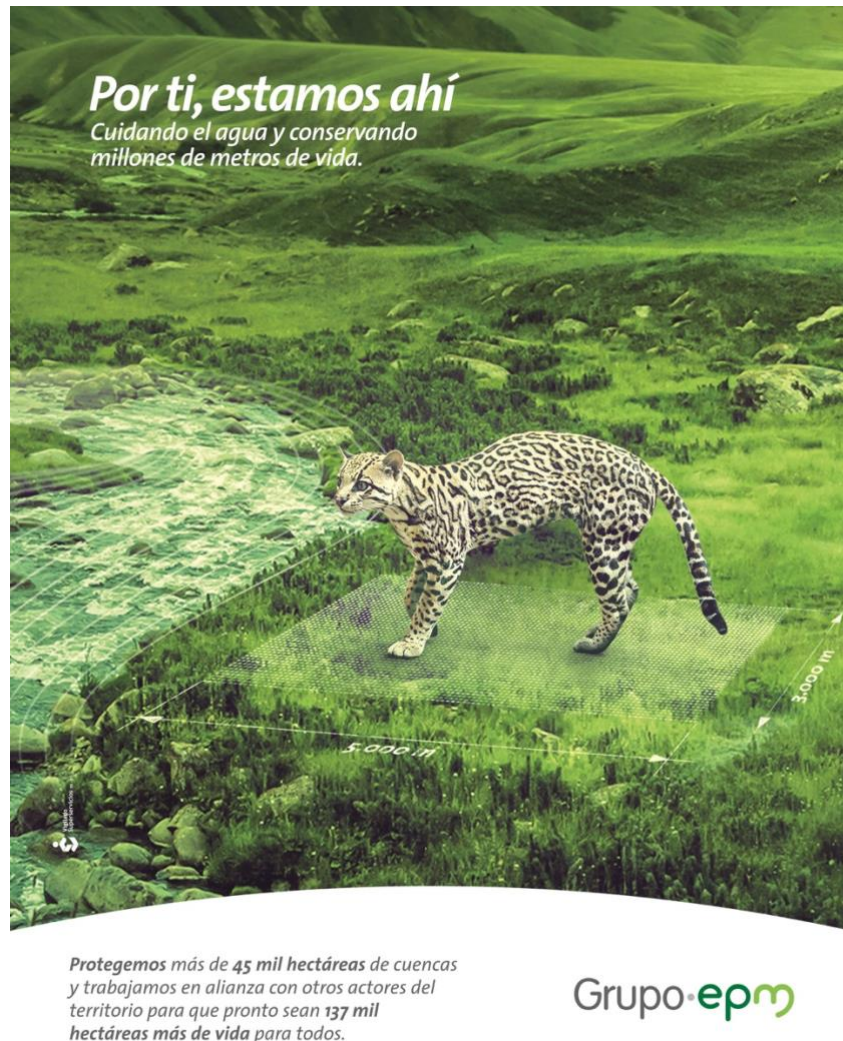
The issue discussed was therefore that, since they wanted to have indicators that would be scalable so that indicators produced for each project could be both compared with those of other projects and added up so to produce a picture of the compensations at regional or national levels, they had to remove what would make the properties too specific or incomparable. In particular, this had to do with the relation between biodiversity and people, since they had to exclude both what was relating to specific vision, understandings and valuation of the biodiversity, and the other to the use that was made of the ecosystem services. But, the expert explained, this also had to do with the removal of anything else that would be too precise or too specific to particular projects or places, including what relates to particular types of ecosystems. Taking the example of the integration of the various taxonomic modes of classification, Chateauraynaud and Debaz (2017) also put forward the severe constraints going along with the compatibilization of ontologically diverse scales:

Le calcul suppose à la fois de réduire la liste des objets pris en compte, de les rendre commensurables et d'organiser, via des protocoles stabilisés, la compatibilité des concepts, des métrologies et des bases de données. Les classifications et les arbres taxinomiques, issues de traditions ou de cultures épistémiques différentes, ne peuvent entrer dans un espace de calcul unifié qu'au prix d'opérations de traduction et de sélection drastiques.

The perceptual reconfigurations of the compensations through the decisions of using certain indicators over others to allow particular types of aggregations relates to the description that James Scott (1999) makes of the aims of the orderly transformation of the German forest with the goal of rendering it obedient and well behaving: "At the limit, the forest itself would not even have to be seen; it could be 'read' accurately from the tables and maps in the forester's office". Therefore, through the desire of transforming the scale and position from which the forest could be read, the nature of the forest is itself transformed. It is indeed not the same 'thing' that is perceived at different scales (or even at the same 'level' but by actors having distinct perspectives and experiences), but distinct joint conjuration of thing-scales which may be ontologically disconnected.

To intend to manage a territory instead of doing 'cartographic exercises' implies shifting from a praxis of scales-as-size to one of scales-as-relation (according to the typology presented in (Sayre 2015). But, while involving transforming an epistemological problem into an ontological one, this also generates problems of scalability. Indeed, scales-as-size are scalable precisely because they neglect the varying nature of the relations that form themselves distinctively when considering different scales (and not only in analytical terms but also in terms of experience).

Figure 49: Advertisement from the company EPM published in a magazine²⁰¹. The text reads: “For you, we are here. Looking after the water and conserving millions of metres of life. We protect more than 45 thousand hectares of river basins and work in cooperation with other actors of the territory so that they soon be 137 thousand hectares more of life for all.”*



The ways scales are brought into being (and are linked to certain ideas of the territory overlooked and of its nature) in intra-action to the ways the impacts on ‘what is’ are taken into account also reconfigure (and induce) the territory itself and the relationships that are acknowledged to exist or that could or should exist within it. For example, the type of scalar abstraction inherent to the compensations is well illustrated by the communication made by companies around their conservation activities, such as this advertisement from EPM (see Figure 49), a company building and managing hydroelectric dams, including the largest in Colombia, whose commissioning was disastrous, illustrates well the type of transformation of the territory that the compensations must operate to be able to work. While no mention is made of the damage that their actions compensate for, they seem to intend to proudly show the seriousness of their conservation work by presenting a scientific, mathematical and modelling vision of the life milieu of the jaguar, through representing the river as a computerized flow and its living area as a set of perfectly controlled squares. The territory becomes the space of calculation over which the oversized jaguar appears to be put on as a symbol of their conception of

²⁰¹ Visión & Progresos Ambientales #1, April 2017, Cali, Colombia.

its scalability. As these types of descriptions may express the perspective of those who “manage” the area for the company, its performativity may also produce a new description of the territory that risks being authoritative.

The compensations that existed before biodiversity offsets have been described to me as measures that were not related to the impact they were said to compensate. With the advent of offsets, the relation that compensations should have with their impact is portrayed as aiming at being so strong that it may become fusional, so that they would finally merge into each other and that the resulting compound would be invisible (at least to the eyes of the accountant). But this process of inter-annihilation²⁰² and the resulting invisibility doesn't describe not only the numerous impacts on both sides that were not taken into account and also had to be invisibilized, but also the differentiated resulting visibility of impacts and compensations. Indeed, while compensation may not be the ‘licence to trash’ that some of its critics consider it is, the activities done by companies in its name are often put forward by companies and the State to publicize their ‘good’ actions (Like an advertisement by the Company Carbones del Cerrejon promoting its environmental compensations, managed by its foundation in partnership with the NGO Conservation International, as “the evidence that well-done mining exists²⁰³”). Thus, while scales of impact may be complex to establish and controversial, their articulation with the scales of compensation can itself be rendered less explicit, so to favour what may allow putting forward actions that are ‘nature positive’.

8.9 Conclusion

Scales, and in particular the possibility of the meaningful articulation of actions and observations made at different levels, have also been for a long time a preoccupation of all sorts of researchers, including social researchers, and among them anthropologists, sociologists, geographers and political ecologists. They have been both looking for ways to generalize their findings and to understand the relations and dependencies between micro and macro-phenomena, in both directions. Said differently, they have been concerned by the intra-actions between phenomena and what could be considered to be their context, and therefore as well by the problems of defining and delimiting both phenomena and contexts.

In this chapter, scales appeared as scales of analyses of impacts and scales of impacts themselves, but also as scales of reach and of precision of the dispositifs, as scales of critique and argumentation (both relative to the gradient of critique and the extent of the criticism), and as scales of public controversy, in relation to the scope of the debates but also the actors involved, which implication may not necessarily be related to the impacts they ‘directly’ experience, but also the nature of the support they provide to a cause, the scale-level (since it is not only a spatial level but may imply different types of networks and actors, even at the same ‘level’) and location of the debate (media, politics, diplomacy, etc.). Those different types of scales are thus of diverse nature and interrelate in complex ways.

²⁰² Analogies are often considered unscientific, but they also liberate the imagination and help see things from different perspectives. In physics, the annihilation can refer for example to the mutual conversion of a particle and an antiparticle into energy in the form of electromagnetic radiation. What could be the unaccounted energy liberated by no net loss annihilations?

²⁰³ Advertisement from Carbones del Cerrejon in the newspaper Diario Norte, 2017.

Chap8: Biodiversity impacts and compensation scales: conjurations, articulations and contestations

Scales can be constitutive of the making of particular observational positionings (for example for connectivity studies) as well as the result of a process of measurement (for example with the definition of areas of influence, on the basis of measurement that already assumes a number of relations), to finally materialize statements on the nature of the relations that are both existing and legitimate to observe. Expanding scales (or considering higher levels) can have contradictory effect on causality demonstrations and does not necessarily imply that impacts will appear bigger or that they spread further, whether spatially, temporally or in intensity, but as one expand, not only issues of dilution emerge but other elements and relations appear, potentially shifting the nature of the problems contemplated completely.

While a particular milieu can be defined, observed or described through a number of scales set at particular levels, but changing the scales or the levels doesn't relate to descriptions of the same milieu through different scales or at different levels, but will most likely correspond to the description of a different milieu, populated by distinct beings of different natures and which have different relations. As such, milieux are the antithesis of scalability, which is why Anna Tsing wrote what appears to be a non-scalability manifesto. The non-scalability of most observable phenomena and processes comes from their non-fractal nature. Even if some similarities can be drawn (or even that relations within elements may remain identical, like the Kogis who consider analogically the functioning of the earth, a territory and a body), the scalability of issues is actually a projected rational ideal of bureaucracies.

While the concept of scales relates to particular epistemological, ontological and axiological challenges, those do not remain within an enclosed scientific community, but also are at the core of the questions emerging relatively to the possibilities to describe particular elements of nature, to the nature itself of what ought to be described and to the values that they both shape and express. Those questionings, when they emerge in relation to interacting modalities of transformation, that is either catastrophic or sudden events, events resulting from strategies of the actors, or the convergence of series previously unlinked, thus become the matrix of the arguments and controversies relative to scales, scalings and scalabilities which allow to characterize those transformations.

The preceding chapters showed that the 'right' valuations of the compensations depend on the circulation of knowledge regarding normative interpretations but also that those valuations have to fit within the range of acceptable demonstrations, even if contradicting regimes of valuations may lead to conflicting valuations. Distinctively, if we come back to the idea that valuations are processual articulations of facts and preoccupations, this chapter showed that this articulation implies to conjure the scales which would allow putting into relation, through series of transformations, the scales defining the properties of the facts and those relative to the preoccupations. The possibility of recognizing a preoccupation as legitimate thus depends on the possibility to make the articulation, that is to find a complex scale which allows to make a compelling description of the facts and the chains of causalities linking them to particular preoccupations.

Focusing on the movements of association and dissociation that scaling processes involve allows perceiving their relations to methods of classifications and of assignation of relations between elements, whether of dependency or of causality. This chapter showed that the definitions of tangible impacts, of the existence of separate elements and of the relation between them entirely relies on their associated scales, and that those are socially constructed through the three regimes of proof mentioned previously, and are as well the object of controversies. As much as maps, scales relate to the territories but also contribute in conforming

them to what they express about them, that is that they also become both products of perceptions and percepts themselves.

By focusing on scales this chapter aimed to stress the interdependence of beings and elements populating the world, and put issues of relationality at the centre of the question of the link between knowledge production and valuations. Indeed, if nothing can exist autonomously and can be valued in and of itself. Any attempt to do so actually have to rely on the conventional stabilization of equivalencies and on their invisibilization, so to let think that values exist in themselves. Indeed, while the observation of particular events which may let think of the possible existence of separate scales or things, only the friction between scales and elements allow attributing meaning and produce valuations. This view, which puts forward the relational implications and dependency of scales, can also allow linking it to descriptions of assemblages, which allows seeing scales as complex multidimensional phenomena which are the project of actors' actions and not just as a simple unidimensional 'parameters'.

Finally, with regard to global assessments and narratives, this chapter hoped to show not only that what is referred to as the most pressing issues of our times globally can have very different implications across scales and unequally affect forms of life and populations. This requires refraining from simplified understandings of their consequences, but also imply that they are embedded by the different actors into visions of the future which can be produced through the articulation of different regimes, and that the simplification of the narratives impede capabilities to produce new alternatives and open futures not yet envisioned. While the development of environmental impact assessments in Colombia and the extension of their scope could be considered an improvement for the preservation of the environment (it is quite a recent evolution), decisions are still shaped by persistent political commitments to a blurry "sustainable development" embedded in a fierce nation-building project. In this context, numerous human and more-than-human rights defenders oppose what they consider to be unjustified destructions, contaminations and injustices, and struggle to reframe the issues they're facing, in particular by building on alternative scale-making projects.

Conclusion: Biodiversity knowledge, ethics and troubled politics

This dissertation aimed first at shading light on the links between forms of knowledge, including their production, transformation, reach and scale, and ethical stances regarding what can or should be done in relation with elements connected to “environment”. This therefore implied exploring both the relations that are drawn by actors between forms of knowledge about biodiversity and ethics regarding its protection and compensation, as well as how moral considerations participated in the situated production of knowledge informing those preoccupations. Indeed, while the discernment of ethically right choices is based on the knowledge available, and thus about the actants and stakes involved, the processes of production, access or revision of knowledge are themselves contingent on ethical preoccupations, which emerge from individual or collective inquiries or experience. Thus, this dissertation studied valuation processes as means of putting knowledge and ethics into coherence. Nonetheless, valuations of biodiversity or of the environment in the context of this research were never autonomous, and were intimately interlocked with valuations of the nested or concurrent processes impacting them or designed for their protection, as well as valuations by actors of the valuations of other actors or institutions, often leading to their discussion or contestation, notably through valuations of the substance and form of the arguments put forward.

It is important to note that the types of knowledge considered were not only scientific or technical, but related to all the modalities through which humans make sense of their milieu and of their activities. This doesn't only include formal knowledge but also ethnomethods and knowledge about the functioning of the institutions, positions and roles of actors, language, relations of power, and more generally all knowledge that actors produced and mobilized in their activities, whether coming from their personal and work experience. Indeed, the possibility of considering ways of knowing as being objective, scientific or technical involves a separation from their referentials, that is the negation of their situatedness, and from what motivated their incorporation into systems stabilized for a specific purpose, that is considering that the intentions behind their formalization didn't influence the shape they have taken.

Even when facts are successfully stabilized, there is a constant reinterpretation of the relations between facts and signs pointing toward other signs ultimately pointing toward a shared phenomenological reality. Nonetheless, this doesn't imply that facts are strictly relative or are considered from a constructivist view of reality. One could nonetheless make an analogy with the Einsteinian understanding of relativity in which ethics would form another dimension of factuality, bending together our worlds as the curves of space-time do. Thus, when attempting to decipher the coproduction of facts and ethics, an observer would only be able to

successively ‘purify’ one of them, so to observe and describe it, while leaving the other temporarily unspecifiable, as the electrons in quantum physics. This thus leaves the researcher in a position in which the inseparable character of facts and ethics obliges to not force their isolation because of a need to differentiate actors according to their ‘values’. In turn, it shows that the coexistence, articulation and inseparability of valuation processes are linked concomitantly to both spaces of calculation, conventions and experience (as in the tryptic developed in Chateauraynaud & Debaz, 2017).

In the same movement, the present investigation intended to analyse how stances about facts considered as emerging from particular ethics or as having ethical implications are translated into orientations for practical actions. Thus, the idea was more specifically to understand how diverse valuations of biodiversity, and of actions which may affect it, aimed at being put into coherency. While this could be asked in a philosophical way, this research sought to provide elements of response based on fieldworks, investigating the specific ways with which the actors that I’ve followed considered that the facts and their corresponding preoccupations were implying, from generic principles to decisions for particular situations, and were relating to other facts and preoccupations. Focusing on the case of biodiversity offsetting in Colombia, I aimed at overcoming the pitfalls of approaches based on biases or focusing on the objective gaps between discourses and reality, by showing and questioning instead the constant work by which actors try, at all levels and in all their practical activities, to resolve dilemmas and reach and maintain a certain degree of coherency. The observations and descriptions thus aimed at uncovering the processual revision of their beliefs and the adjustment of their actions along with the elaboration of justifications for these changes.

With regard to the articulation of the valuation of biodiversity, of problems and of particular solutions, the aim was more generally to interrogate the seemingly coherent solution that offsets represents for some actors, and in particular the types of problems that they are supposed to resolve, and the ones they create. The more specific questions that thus underpinned the fieldwork in Colombia was first why the Colombian State chose to implement biodiversity offsets, that is an instrument involving a great complexity as well as stable and docile territories, considering the social and political context of this country, including the levels of informality, corruption, the ongoing existence of numerous armed groups and the lack of recognition and difficult situation of the campesinos as well as of the Indigenous and Afro-Colombian communities in this country that never fulfilled its promises of agricultural reforms, land redistribution and autonomy for the communities. In a second phase, the present research then aimed at exploring how the actors in charge of the compensations were trying to simplify them and aimed at stabilizing and rendering more compliant the territories in which they would be implemented. Conversely, it equally asked how the actors were dealing with an uncompliant complexity as well as with unstable and resisting territories and biodiversities.

In order to answer these questions, the first chapter came back on the history of the concept of biodiversity. While ecological concepts previously crafted, like the one of ‘ecosystem’, dramatically shaped and transformed the scientific, western and global understanding of the nature of nature and of its dynamics, their relations to both ethical preoccupations and desired implications have in no way been as wide and explicit as the concept of biodiversity. In particular, its meanings greatly surpassed which of the expression of ‘biological diversity’ that it was, at first, simply supposed to shorten.

The plurality of definitions of biodiversity as well as its close relation to the ‘mission-driven’ science of conservation led to debates over its scientificity, that is as a form of knowledge congruent with the

epistemological canons of scientific validity and which definition may be stabilized. These showed, among other things, the attachment of scientists to their privileged positions in the definition of the reality and as providers of solutions to the problems that they uncover. Somehow, many discussions that took place seemed to fail to acknowledge not only the difference between ontological and epistemological controversies, but also the fact that the goal of science wasn't necessarily to provide descriptions to replace the reality itself, but to provide theories on the reality that are accurate enough for their purpose. In this sense, trying to contend into 'normal science' (by opposition to embracing its 'post-normal' character) a concept that had become a synonym of both life in general and all life forms, even more so in the context of a possible existential threat, proved to be not only an impossible task but also an obstacle to the emergence of meaningful disputes over the modes of valuation.

Ethics emerge from the relations that are established between the subject and the object of an ethical positioning. Studying biodiversity ethics therefore involved starting from the different descriptions of the ways in which humans are considered to relate to it. Indeed, while appearing philosophical, tentative answers to these questions are constantly drawn, both in abstract terms and in more pragmatic ones, and shared by authors and institutions concerned by its preservation. This is particularly visible in the frameworks developed as part of the work of to produce global assessments and which consider the relation between humans and biodiversity through sets of interactions which were first based on influences and values, and then on the concepts of drivers of change and ecosystem services. The IPBES framework finally split the link to humans into institutions, assets and good quality of life, even if the question of values stayed integrated as part of the "indirect drivers of change". These transformations therefore jointly redefine the nature of humanity and of biodiversity through an valuation of their relations according to particular preoccupations.

Since the approach considering the 'values' attributed to biodiversity rely on a homogenous background declined according to cultures, I distinctively considered that ethics toward biodiversity emerged from situated valuation processes depending on specific biodiversity knowledges. Those processes are thus not stable but subordinated to the continuous transformations of epistemologies, ontologies and framings, as well to the production of new data and ignorance. Crucially, they are also troubled by unavoidable and irreducible uncertainties (even if temporarily stabilized definitions, criteria, procedures and metrologies can be incorporated in institutions) around which the interplay of actors will structure itself.

The second chapter focused on the IPBES, a peculiar type of international institution which, after difficult negotiations, was defined as a science-policy interface producing consensual but authoritative policy-relevant facts without adventuring itself in the policy-prescriptiveness, thus following the path opened by the IPCC. Its members are a large majority of the world's States, whose representatives decide its orientations and the subjects of the scientific reports that the institution should produce in a diplomatic way of deliberating and bargaining (Charvolin and Ollivier 2017). While its work started with reports focusing on the world's regions, its aim is to produce knowledge about biodiversity at global scale, and therefore to be able to produce statements of the highest level of generality and universality possible. To do this, the scientists in charge of the reports compile and evaluate the results relevant scientific papers, which they occasionally complete by studies and surveys aiming at equilibrating their findings by the inclusion of Indigenous and Local Knowledge which they weren't able to find in the literature.

The making of global biodiversity is thus fundamentally characterized by the tension between systematization and pluralization of knowledge through the development of new frameworks hoped to coherently articulate epistemological irreducibilities and ontological incompatibilities. But the last stage of the reports consists in the discussion by the assembly of States representative of the summary for policy-makers, which is expected to be the most widely read, before its final acceptance. The summary of the scientific report is thus discussed, reviewed, rewritten or redacted as necessary by the States so to allow its unanimous acceptance. What I observed shows that the interface, more than being a unidirectional or even bidirectional articulation between science and politics, was actually a place of continuous hybridization of science and politics, and of continuous negotiation of their purification, so that the facts would remain pure (even if this process of purification of science was based in a seemingly contradictory way on depoliticization through the reach of political consensus) and that the political decisions would remain free from scientific interference.

Nonetheless, ethics were constantly involved in this process, whether as ethics of researchers, who had to defend the scientific quality of their research and their objectivity but also to promote a degree of epistemic inclusiveness, or ethics of some States' representatives who, 'conscious' of the stakes, were actively advocating for the accuracy of the information and for avoiding the elimination of crucial statements, so that it could alert the politicians to the 'reality of the problem'. But the nature and degree of consensuality of this reality also depended on the capacity to separate, and demonstrate this separation, the facts presented from possible situated valuation processes and categories or concepts too openly related to the field of the political, as it was the case with the use of 'rights' and 'reform' but also with regard to 'Indigenous Peoples' in certain contexts.

After the adoption of the report, which non-policy-prescriptive character was emphasized, a number of actors presented the text as nonetheless politically binding. This was done in particular by referring to it as a call for action and by putting forward its moral implications, which would then become themselves the way of interfacing knowledge and actions through their nesting in political decisions. Still, the attempts of translation of the issues and global alerts described into action to counter them can give birth to a myriad of new propositions reinterpreting sub- or related problems and solutions and which actual degree of appropriateness can be widely contested.

To show more specifically how diverse processes of translation can lead to frankly divergent problematizations and propositions of solutions, the third chapter then focused on the emergence of biodiversity offsets. Indeed, the biodiversity offsetting of impacts attributed to projects of infrastructure or resource extraction was promoted in the early 2000s as a key solution by actors working on the links between 'business and biodiversity'. Despite the agreement with regard to biodiversity loss on a number of global or general facts, which may relate to common modes of valuation, some actors gradually but quickly constructed critical arguments against offsets, following their own inquiries. Disagreements first emerged with the deconstruction of the premises of the facts making, allowing or backing offsets as an appropriate solution, that is of what was understood by the concept itself of biodiversity and the implications for its possibility to be measured, and deepened with their understanding in a wider context or as situated articulations with the milieux from which they had become detached.

The analysis of the literature showed that biodiversity offsets found themselves at the frontiers of ecological science, business approaches and bureaucratic management, thus involving specialists and groups

from those three sectors. This led brokers who wanted to make them dialogue to the development of particular ‘frameworks’, and critical actors to put emphasis on its relations to capitalism and neoliberalism, as well as on the invisibilization, in public arenas, of power relations underpinning the implementation of offsetting projects.

As the opposition developed in a number of arenas, including in the academia, actors defending the principle of the compensation had to commit to the constant improvement of their framework, therefore maintaining in tension a critique of what exists with promises regarding both the success of the instrument in general and the success of its particular implementations, which timeframes rendered concrete demonstrations impracticable. While the controversies were displaced according to the contexts toward different biodiversity ontologies or framings of the causes of biodiversity loss, they were also expressing diverging valuations of the consequences of both biodiversity loss and biodiversity offsets, themselves leading to different coherencies and confronting ethical positionings. But, moving along the gradient of critique, they were also articulating these coherencies with encompassing ones having to do with their views on the nature of the ‘context’ and of the ‘reality’ in relation to which offsets in their various flavours may or may not be considered as adequate ‘solutions’.

Chapter 4 showed how a group of local actors, including the government, companies and an international NGO who served as a broker for the translation of international experiences into the Colombian context, organized an epistemic community to create and later improve the national offset’s guidelines. While the assignment of environmental compensations in Colombia existed before the development of biodiversity offsets, but their advent had been considered as progress in terms of biodiversity accounting, compatibilization of development and conservation, financing of protected areas and rationalization of compensations.

Each step of the development of the Manual required to assess institutional, legal, ecological and political constraints that the development of offsets may encounter, but also to connect the description and valuation of particular aspects of biodiversity, in particular when considering it through its division in ecosystem types. Analysing the design of the compensation factor showed the close articulation between preoccupations, technical constraints and ontological transformations that had been necessary to create factors (among other parameters) that not only their makers considered meaningful and practicable, but that would also be acceptable for companies which activity shouldn’t be impeded. The attribution of numerical value to each type of category used to reconfigure the definition of ecosystems and of equivalency required the conjuration of *ad hoc* scales encompassing specific elements with the geographical, sociohistorical or ecological future potential references to which they ought to be compared.

But the reconfiguration of biodiversity knowledge according to a specific instrumental use led to the forging of concepts which relation to tangible facts was often difficult to grasp for the actors. The tension between simplification and complexity also translated into practical challenges threatening the precarious integrity of the architecture of the Manual. These conceptual and technical tensions relate to epistemological and ontological difficulties, but the divergences between actors over the definition of indicators of success of compensations also showed their interdependence with other dynamics hoped to be externalized, as well as the troubles with their aggregation and scalability, and thus pointed toward the crucial character of scaling in valuation processes.

Chapter 5 focused first on describing the Colombian national environmental authority in charge of the evaluation of the compensation plans submitted by the companies. While being an independent agency from the Ministry of the Environment, its functions of being both the evaluator of environmental impacts and the enabler of sustainable development put it at the uncomfortable crossroads of contradictory injunctions, which are felt throughout the institution, including by employees in an intimate way. A critical space is formed around the ANLA, with journalists, counter experts, the government, organisms of control, NGOs and local communities. Its decisions are thus continuously scrutinized and commented by actors with diverging interests and which posture can oscillate between collaboration and a form of defiance.

The compensation plans that are presented by the companies are often stating their ethical and conceptual alignment with the concepts put forward by the Manual of compensations and that should be used for their design. While they try to abide by the guidelines, those are often either misunderstood, voluntarily misinterpreted or, to the contrary, understood in such a literal way that their compliance becomes impossible or meaningless. While ANLA employees go to the projects' sites to verify the information provided, they usually analyse the initial propositions of compensation from their office only, relying on geographical data and maps which type and levels of accuracy often render difficult a verification of the biodiversity analysis submitted by the company going further than an approximate confirmation of the vegetation cover.

Compensation areas were nonetheless visited by ANLA experts during follow-ups undertaken at further stages of the projects. The visits that I did with them showed the difficult articulation between the numerous guidelines of the impacts assessments and of the compensations within territories that resist being put into calculation and which dynamics disrupt the deployment of robust dispositifs allowing the commensurabilization of all parameters. On the other hand, employees of the ANLA were assessing the quality of the information provided by the companies as one would conduct an investigation, articulating both regimes of proof and of valuation, and transforming their ideas of the problems as they were confronted with new information and tried to get a sense of the validity of the clues they found and adjusting what they considered to be the relevant level of detail according to their purpose.

Chapter 6 showed the fragile and sometimes awkward arrangements between science, normativity and technical evaluation on which the implementation and evaluation of biodiversity offsets are based. Indeed, the design of offsets and commensurability conventions at a national level led to the emergence of dissensions and incomprehensions around particular situations.

Relying on numerous steps of translations of concepts and data, the idea of what should be a correct application has to be constantly assessed, verified and maintained through a never-ending normative work. The decisions that the bureaucracy have to produce on the appropriateness of the propositions of compensation were found to be in constant tension between the normatively 'correct' application and what the actors think it would be best to do to yield what they consider to be the most desirable outcome of the compensations in terms of biodiversity. Moreover, the desirability of outcomes itself greatly varies according to the situations as well as to the properties and temporalities taken into account, or by putting forward other considerations like the benefits for a given species, for local populations or for an ecosystem considered to be a priority, even if it wasn't the one impacted and therefore does not match the compensation rules.

For ANLA employees, doing a good job meant to try to align the sometimes contradictory imperatives of the norms and of their hierarchy with their own axiological preoccupations and valuations of certain aspects

of biodiversity. On the other hand, the employees of the companies had to make sure they interpreted the norms correctly and considered the technical feasibility of their plan, while also showing their ethical alignment with what they considered to be the values of the evaluators.

The impossible scientificity of the no net loss of biodiversity means that its demonstrations always had to rely on axioms and conventions elaborated by third actors, themselves producing their grasps by relying onto other instruments or institutions, thus translating further the burden of establishing the foundations of the demonstration.

Chapter 7 made evident that, in the course of the evaluation process of the biodiversity compensations, actors were not only valuating specific elements of biodiversity but also the relations they have between themselves and with other actants of their milieu. Beyond this, actors were also valuating all aspects of this process as well as everything forming the dispositif itself, that is that they were valuating the norms and their concepts, the technical instruments or the documents of reference with regard to what it allowed to do or not to do, their appropriateness for their stated purpose, and the problems they were generating and their relation with particular preoccupations. While each actor was also evaluating the actions and their consequences of other actors with regard to the norm, they were at the same time also valuating them with regard to moral criteria or to their relation with issues that they considered to be connected even if not provided by the norm.

Thus, valuation processes were troubled by the difficulties that actors were encountering when trying to articulate the compensation's axiomatic with a particular territory about which they had their own concerns but under a different and sometimes incompatible frame. But, despite its orientation toward autonomy, the incompleteness of this axiomatic made that it was necessary to articulate it as well with other regimes of proof in ways that often showed its awkwardness. Therefore, the type of knowledge about the world projected on the world by the compensation's dispositif didn't manage to become hegemonic, and the types of valuations of biodiversity and the relation that biodiversity has within itself embedded in the compensation normativity were often insufficient to allow the actors to do their work without calling in other points of reference. Other regimes of valuation were thus necessarily existing beyond or beside the Manual, but the efforts to find coherencies or compatibilities between them and those proposed by the compensations were often deceived. In a kind of *mise en abîme*, actors were thus confronted with valuating the differences between valuations as well as valuating their own potential decisions in their attempts of resolving the dilemmas they were facing. Valuations of biodiversity actually never occurred in isolation but were always caught in a web of relations linking a multiplicity of valuations and their objects which, even when being the 'same', could be understood through knowledges based on diverse ontologies and epistemologies, or be framed or scaled differently.

To understand valuations as the result of the valuation of a particular set of relations, Chapter 8 analysed the reliance of the valuations of biodiversity on scales, and how those thus shape valuations through their conjurations and politics.

Although it is widely recognized that the spatial and temporal dimensions of biodiversity impacts and offsets (in particular the time required for restoration) are problematic, they are nevertheless considered as common grounds on which discussions can take place. However, other modes of linking such as connectivity disrupt the relationships taken into account and the localized nature of an ecosystem, showing flows and dependencies, and the problems associated with a uniform and scalable vision of space. Similarly, the

consideration of hazards raises the question of risks, maintenance and potential irreversibilities, showing the problems associated with a linear and scalable vision of time.

What is considered to be the scale of impact of a project can only be brought into being through the articulation of multiple scales, which include spatial and temporal scales as well as scales of measurement and qualification. For example, it has been shown that while some limits can be drawn on a map, it doesn't mean that they may be reduced to only a spatial dimension at a given time. Indeed, it appeared that the areas of influence, as scale-making projects, are not just a two-dimensional spatiotemporal extent but are multi/many-dimensional, not only because of their division in mediums and components, but because they also have edges, depths and grains, and are also selective and constrained in what they encompass.

The impacts taken into account evolve through the work of the actors, whether local actors, activists or employees of the ANLA: if they consider that particular impacts of a given project are not addressed, they may produce arguments for their internalization in the assessment, but they can also adapt concepts and techniques to make vary the analytical scales. Changes of perspective came for example from a focus on issues of cumulativity, which question the meronomic relations between entities, that is their possibilities and implications of considering them as parts of sets, and which weight and legitimacy seems to rise. The visibilization of new impacts and their successful recognition is thus also associated to a wider struggle of actors, whether local or institutional, to shift and reconfigure the scope and nature of observational, analytical and operational scales, the inclusion of new actants, dynamics and causal links. Indeed, scales also relate to the ontological and epistemological definition of the entities that actors talk about, a relation particularly visible in the contrast between trees, forests and forest ecosystems, for example. Furthermore, besides scales also emerged the problem of the length of mediations and chains of relations that allow linking one fact to another, as well as of the definition of the solidity of the links that form these chains, and in particular the boundaries of their significance. By expanding, reducing or transforming these chains of translations, scaling processes directly relate to causal attributions, and their transformation thus allows shifting responsibilities and their possible ethical and legal implications. In this sense, this process of scaling therefore intra-act with the production of knowledge and with the processes of valuation of what scales supposedly allowed to make apparent.

Finally, this chapter emphasized the relationship between scales and territories, as entities which are places of struggle, notably through conflicts of use, administrative management and the consideration of what crosses the territory, but also the importance of scaling processes in the conjuration of the territories themselves, that is of what composes them, of their relations, and thus of the attachments.

The concept of biodiversity offsets has often been criticized as an expression of a theoretical technocratic and disconnected neoliberal policy, and despite the intention of this research to 'ground' it, that is to link it to particular experiences, material realities and political struggles, the institutional focus adopted here didn't allow investigate extensively the tests to which a particular compensation project is subjected over time and the reconfigurations it must undergo. In particular, another research could have involved studying the actual implementation over time of specific compensation plans alongside the project that they are compensating, so to study what it does to a territory, that is its transformation through the extension of the reach of the dispositif, and in particular how local and non-institutional actors mobilize and generate arguments as they find failures and supportive elements, produce grasps to transform and reconfigure the trajectory of the controversies

around the project and its relation to material engagements. It would have been the opportunity to study alternative processes of valuation in the making, and how they relate to other types of knowledge. In this sense, the deployment of the biodiversity and compensation's knowledge and policies across scales and actors that I have proposed is incompletely represented. Nonetheless, the orientations which led to the design of the present research are less studied ones, therefore allowing to shade light on compensations and their evolution as they are understood by actors grappling with them, and how the practice of those actors put their knowledge system and practices to test, in particular within the Colombian environmental authority.

While compensations were said not to influence the decision of granting or not the licences, since the main focus were on the impacts and their management, it did appear that the criteria of irreversibility or compensability of impacts considered significant had been put forward to justify the rejection of at least some projects, raising the question of the setting and displacement of compensations' frontiers. On the other hand, a number of projects had also seemingly been licensed despite their large impacts or the numerous flaws in their impacts assessments that were regarded as acceptable after an analysis done in what was qualified by the most forgiving as a lax manner. Thus, formal arguments do not seem to fully explain the decisions taken, and a further study could aim at understanding the relations between dispositifs and holds that may be developed over the evaluations carried out by the environmental authority. Indeed, while this could be considered to simply be evidences of a rampant corruption, it also demonstrates the difficulties that the dispositif has to exert the control it is supposed to have on the projects, but also to exist as a dispositif which is actually in accord with its functions, and that before controlling what outside, also manage to control what occurs within it.

Another approach could have consisted in putting an emphasis on 'alternative' modes of valuation rooted in distinct situated engagements with the world and dwellings in specific milieux and their 'biodiversity'. But my hypothesis was that, even within the dominant economic, developmental, capitalist or extractivist paradigm, numerous dynamics of transformation are at work, as the variety of realities that those concepts may encompass already indicates, and that the 'actors in the system(s)' remain confronted to their ethical preoccupations in their practical activities. Indeed, those concerns force them, despite the spaces of calculation that are imposed onto them, to keep juggling between the different regimes of valuation and keep investing the interstices and margins of the dispositifs. The organizations are thus systematically more complex and heterogeneous than what may appear at first sight, and internal contradictions, unbundling of interpretations, oppositions and controversies arise continuously.

A further study could also focus on the epistemological critique of the knowledge produced and put into relation with preoccupations, and in particular in the asymmetries in knowledge diffusion and the difficulties for non-hegemonic epistemologies to maintain themselves alive and acquire legitimacy in the public debates. Beyond the questions of 'participation', symmetrization capacities also depend on networking between researchers and social actors, so as not to be solely dependent on the openings given by the state. While groups of actors aim to regain their autonomy at certain levels, in particular at the local level, they also try not to lose it by levelling up or by moving toward political representation. Indeed, each time the mobilization displaces itself to a higher level, the question of what is represented and of the forms of representation arises, as well as a possible regression of the holds that the actors had managed to forge at a lower level and the possible accusation of betrayal for the actors who would compromise themselves in these arenas. Indeed, institutionalization as pure conventionalism does not allow for the consideration of sensitive experiences, which also involves an openness to temporalities not easily integrated in standardized processes.

A major difficulty has been to try to avoid letting the nature of the object studied (the biodiversity offsets as a policy instrument implemented by bureaucratic administrations) imposing its constraints on the type of observations made, and in particular to end up reducing all activities to strictly bureaucratic and rational processes. An added difficulty was that my original focus on the question of ethics, and in particular on how it is revealed through discourses, conversations and documents. But, as I progressively realized during the course of the research, and following the personal trajectory described in the introduction, the focus on ideas and rationality probably left aside an attention to the fact that humans are not only moral beings but also sensible beings, and that while concepts may be thought to largely structure our relation to the world, our senses, modes of dwelling and direct perception of the milieux could arguably be considered to be essential. But, in consequence to the original framing of this research, this was largely ignored in the observations and analysis done. Nonetheless, how to perceive, describe and analyse the “dwelling” of the people working in administrations or companies, especially in the moment in which they observe and discuss environments from their offices and through a variety of dispositifs? What is the milieu in which they are actually dwelling? Or, aren't they dwelling at all, since they ought to perform only “rational” actions? Or could we develop a phenomenology of the remote and mediated experience of the environment, a phenomenology of the dispositif? While some of the descriptions made of my observations nonetheless allow to get preliminary answers, I didn't ask myself these questions as I was doing the fieldwork, and further investigations could allow to complexify the seemingly insuperable opposition between direct experience and bureaucratic management.

According to Hache and Latour (2009), the possibility of objectifying morality is actually inversely proportional to the sensitivity that one confers to beings, including human beings. The openness of the possibilities of criticism is therefore also linked to the status that is accorded to knowledge and in particular to the status of scientific and technical objectivity. Besides, as ANLA's compensation experts have well noted, the procedure and their ongoing refinement are always at risk of becoming finalities in themselves, instead of being the means of the finality which the procedure aimed to help attain. This links to the tension between conventionalism and consequentialism, which pragmatist approaches emphasize, that is not the focus on the elements puts into place, the agreements reached, the number of discussions that took place, but to the actual results of those actions combined, including in terms of transformations and reconfigurations. Consequentialist approaches thus lead to the contestation of dispositifs themselves with regard to what they produce beyond their stated objects, including controversies over what may be described either as side effects or as systemic effects.

In the end, how to grasp the output of all these tensions, this work and the dilemmas in which the actors are caught? Despite what might be opposed to offsets, it favoured the production of indicators (or indices) that give an idea of the state of health of the milieux, and of all the work that needs to be done to avoid irreversibility, to try to repair the milieux as well as possible, or to help them repair themselves. It also produces a paradigm shift in relation to the use of resources as well as the position assigned and space given to biodiversity. This work leads to the acquisition of skills potentially transferable to others, including to new generations, by creating precedents that form a heritage, or a cognitive environment, in which education is done about what biodiversity is and what can be done in relation to it. The experiences that are taking place can also allow for the structuring of new spaces for calculations, mobilizations and experiences of ecosystems, and thus for commitments to the resolution of environmental problems.

Despite being a relatively inflexible instrument, offsets also offer to actors the possibility to find and explore new gaps, interstices, edges or margins, in which they are able to build grasps so that, far from only being a hold on them, it also gives them a hold over the manners of valuating nature. The emergence of the compensations also opens new critical processes from which bifurcations may emerge, through reconfigurations or reorientations. They are therefore not a unilateral commodification of nature and extension of neoliberal policies, but they also proved to transform the requirements relative to impacts on biodiversity, the qualification of those impacts and the demands of reparation. These therefore oblige actors to revise their strategies of unification of the spaces of calculation or of separation of irreducible causes and environmental damages. But these analytical logics can also relate to counter-intuitive localizations relatively to the gradient of critique, the advocates of unification being for the valuation of differences while those supporting a particularization may focus on the unicity of the capitalist threat.

While this research could also be criticized for not positioning itself clearly with regards to offsets, the paradox is that even the most radical critics, whose analyses can only demonstrate that capitalism still triumphs, even if in an ever more subtle way and except at the margins, effectively eclipse the complexity of the processes and the multiple tests that the system described must constantly overcome, and thus the capacities for opening up futures. The actors are actually doing an enormous amount of work, so we should not just conclude that they are floundering anyway and that their efforts are meaningless. At a given level actions can easily appear as being useless (whether it is that of the actors or of the sociologists), but in reality everything that is produced can be used again later, and the work that is done leaves traces for the future that can be used as support or allow the creation of new holds.

Norbert Elias (1996:57) considered the word ‘time’ as symbolically designating the relation that a human group establishes between two or more processes, one of those being normalized to serve as a frame of reference and measurement standard. Therefore, there isn’t only a relation but an operation of putting into relation, and the tests to which this relation is subjected and through which it may be established or transformed. But this making of relations is also both structured by the possible, in particular through the identification of thresholds within processes of irreversibilization. Thus, the establishment of these relations between facts and between events structure the very character of space and time, including the relations between the past and the present, and the modalities of definition and perception of the future. This situates their tangibility at the frontier of physical realities and social constructions.

The activity of transformation of the relations and of their temporality is particularly visible in the recent movement in Colombia for the elaboration and reclaim of the “environmental memory” of the territories, necessary for seeing again a cosmology as an historical relation with it but also for enabling the understanding of what was described as the living memory, which comprises the customs, languages, animals and seeds, among others. The proponents of this practice, which emerged as a response to the alteration of the relations between human beings and nature due to the armed conflict, and which deserves more consideration, described it as follows:

When we talk about environmental memory in the context of the armed conflict, we are not talking about an inventory of lost or affected ecosystems, although such records are certainly needed. For us, environmental memory is first and foremost a transformative practice of sharing memories and relational feelings about the impact of war on territories by destroying nature. And it is also a healing practice for the territory when it allows people to reconnect with their natural environments that have

been victims just like them, giving new meaning to their relationships with the waters, mountains, forests and land.*²⁰⁴

The making of connections and disconnections are therefore as much a legacy of the history as it is an intentional practice, which can be a way of reappropriating biodiversity, relations, identities and bodies that have been harmed, damaged, dehistoricized, deterritorialized, derelativized or de-situated through their objectification.

By means of the dialectic relation of knowledge and experience, and of the circulation, discussion, adoption or contestation of their validity among the society and between societies, human individuals and groups make themselves holds allowing them to specify the relations between facts or between events. These relations are woven through the series of transformations forged by processes of scaling and valuation, allowing the making of correspondences themselves enabling the emergence of new facts. Conversely, the relations established and considered to exist become a frame of reference for the valuation of the meaningfulness and ethical relevance of the facts and events taken into account.

Thus, this thesis allowed to advance on the front of the critique of compensation by showing that they are ambivalent, since it goes both ways, allowing projects that would no longer be acceptable otherwise and refusing others that are not compensable, independently of the debates on the reality and adequacy of these compensations. It also shows that offsets produce nevertheless warning signals and markers, emerging from case studies, by casuistry or through examples of evolution in one direction or another, and thus produces collective learning effects, in particular about what compensations are or should be. On the negative side, there is a potentially unlimited creation of problems with regard to the elaboration of spaces of calculation oriented to impacts and compensations, and a gap that can widen between the statement of rules and standards on one hand, and practices on the other, however fine the representation. This requires vigilance over the types of equivalencies stabilized, and the balancing of the acceptance of common modes of regulation and the feeding of conflicts. On the positive side, it makes visible the frictions and the attachments of different groups of actors to their practices, uses or ways of valuing. So it allows a space of visibility of critical points, including tests rendering apparent incommensurabilities, which allows to put regulation in the exchanges between actors who do not have the same interests or points of view, that is to say a mediation on which they can have arguments, including to contest the frame itself.

This mediation is crucial because, while ethics are central in the elaboration of arguments and decisions through their mobilization in valuation processes, they are not the only basis over which actual courses of action are determined. Ethics and possibilities of valuation are multiple, and are in many cases contradictory and may lead to dilemmas and the squeeze of actors for whom concrete choices are not linked to biases, interests or strategy but to political processes involving conflicting actors whose power asymmetries are reflected in varying capacities and reaches of expression. Indeed, along the course of this inquiry between knowledge and ethics, questionings relative to the definition of the political and of its nature were never very far away. This was rendered visible through a variety of concepts referring to directional processes, often in the form of dualisms of different nature: inter- and intra-politicization, politicization and depoliticization, internalization and externalization, visibilization and invisibilization, stabilization and destabilization, post-normalization (by reference to the post-normal science or post-normal age) or pretensions to normality,

²⁰⁴ Censat Agua Viva, August 18, 2020, *La memoria ambiental para el "retorno in situ"*, blog article. <https://censat.org/es/analisis/la-memoria-ambiental-para-el-retorno-in-situ-9518>

objectivity or scientificity and subjectivity, hybridization and purification, and finally claims of certainty versus uncertainty and of the possible versus the impossible. Nonetheless, the goal of this dissertation wasn't to point to processes that should or shouldn't be political, but to show how actors may in some situations consider and try (sometimes strategically but not necessarily malignly) to highlight some of the political aspects of an issue through different mechanisms. At their core is a struggle over the definitions of the reality and the ways these definitions impose themselves upon others, as modes of legitimation or disqualification of facts and valuations. The descriptions made are through a particular framing and scaling of a situation and of its context, but also relate to complex arrangements and interactions of milieux, situations and contexts. Ontological and scales transformations as well as reframings are themselves not dualisms with poles, but complex networks of relation of signs and properties, and of attribution of causalities and effects, emerging from the experience.

The oppositions mentioned above are not dilemmas to be resolved by the actors by deciding which orientation is best in terms of political preference, but the circulations between the poles reflect moments in a controversy or a political process. Their resolution thus involves reaching a certain degree of commonality, but in a way which impede its foreclosure and the consideration of its validity for all contexts or for an unlimited time. This momentary space of meditated dispute could tentatively called a positive commonality. On the other hand, a negative commonality would refer to processes of knowledge unification through the forced erasure of incompatibilities, incommensurabilities and irreducibilities, which Chateauraynaud and Debaz (2017, p573) put forward as a triad affecting social and political representations. In the current research, they correspond for example respectively to the difficulties of the ANLA to find a common language with its interlocutors when facing a problem of incompatibility, like between the type of restoration and the type of damage of a particular industry; the incommensurability has to do with the way a particular community lives in a particular ecosystem and may consider it as a life milieu, to which they are attached as a whole and by the specific knowledge of what composes it and the relations the community establishes with it; finally issues of irreducibility have to do with the potential irreversible loss caused by an impact, due to the irreplaceable distinctiveness of the milieu impacted and of the experience and links that beings have woven within it. The denial of their existence and the knowledges of Others then enables the scaling of a 'singleverse' (whether with universal pretension or not), hegemonic spaces of calculation and the reduction of complexity. In turn, this simplification cannot but favour in all instances the arguments of the actors which are most successfully put forward their higher legitimacy and the universality of their knowledge claims. While actors may consider that the protection of the commons of the humanity requires their rendering calculable and describable through universal concepts, even when it is done in a contradictory way for the protection of 'diversity', a ordinary way to eliminate walls built between worlds is by using a bulldozer, that is by adopting the opposite but equally violent positions of negating differences or considering them insurmountable and renouncing to dialogue, thus by favouring processes of assimilation or of annihilation.

Nonetheless, at all levels, it is only possible to generate peaceful public arenas by the construction, even if precarious and temporary, of worlds complex enough to contain many worlds, as per the Zapatista formula. This implies recognizing, at least in some moments and after sincere deliberations, that despite the a priori incompatibility of the plurality of versions of the world, the incommensurability of values and the irreducibility of the experiences, a degree of commonality and shared tangibility is possible to be found. The dividing lines between the poles are places of persistent and necessary tensions where a form of diplomacy may deploy itself

and that I've illustrated by referring to them as the edges of the political. These edges are also a space where encounters can occur between knowledges about things that may not be considered identical but momentarily understood by the same 'taken as' (that is through common properties, even if disagreements persist over the nature of what is described), or in any case understood as having a certain unity that makes it possible to overcome what made them irreconcilable.

A variety of approaches actually exist to enable a common world, and they can either aim at erasing differences or at finding ways to allow possibilities of dialogue, for example through the maintaining not of a perfect translation but a controlled equivocation (de Castro 2004), or by allowing space for middle grounds, following the term that Richard White (1991) coined with regard to the communication between indigenous people and colonizers of North America. A pragmatic approach to ecological issues was also described by Emilie Hache (2014) as the learning of the elaboration of compromises, so to allow building a common world. But, by borrowing the expression of yet another academic, communicating and finding agreements across differences in a non-hegemonic way could also imply staying with the trouble (Haraway 2016) of the unclear, unstable and unforecasted relations, delimitations and circulations between science and politics, and between knowledge and ethics. Finally, this discussion can also find an echo in the 'convivial conservation' proposal made by the political ecologists Bram Büscher and Robert Fletcher (2020). In their book on 'saving nature in the Anthropocene', they refer to the intention that Ivan Illich had when he himself called for conviviality, and which concerned the development of *eutrapelia*, defined as "the quality of being skilled in conversation" (in Büscher and Fletcher 2020; Illich 1973) in a way that relates to autonomy and creativity, but that can also be associated with truthfulness, friendliness, and dignity.

This degree of openness and tolerance to troubles also relates to the types of expertise that are deployed and to either the acceptance of the plurality of experiences of the milieux or the finding of what they may have in common. This is also what is expressed through the idea of a world of many worlds, which purpose is not to give free rein to an unbridled relativism but which de la Cadena and Blaser (2018) also considered to be a necessary tensioning between the unifying narratives of the global alerts and the infinity of the experiences which plurality must be both acknowledged, preserved and cared for. What is therefore important is both the multiplicity and the unicity, not taken as a radical ontological incompatibility but as a possibility of encounters, maintaining in tension both a universal orientation and a continuous attention to the ecologies of differentiation and reconciliation through which compatibilities are negotiated.

Finally, among the tensions within, between and beyond humans, considerations of balances between opposed and/or complementary elements (often as two poles but also multiples in more complex systems) shape in large part the understanding of more-than-human entanglements and of their related issues. They vary from the observation of equilibriums or disequilibriums, to assessments of their causes and desires to reach a specific dynamic state attainable through practically and ethically adequate means. One version of this inclination to balance is found in the biodiversity offsets through its double balancing, both equally controversial although for different reasons, of development and conservation and of biodiversity losses and gains. Another can for example be found in the UN '2050 Vision of living in harmony with nature', which was described in Chapter 1 and relates to a goal of a global "greater balance with nature". Recent intergovernmental discussions about this "vision", taking place during the negotiations of the Post-2020 Biodiversity Framework, showed a tension between the two strategies. On one side, some were advocating discussing and fixing a more

defined vision of what a future harmony would look like, possibly allowing evaluating the path to be taken and envisioning the journey ahead. But other parties were in favour of leaving the “vision” and the future more open so to allow reaching a greater unanimity in its favour, at the risk of making an empty shell out of it, thus with few obligations and little performativity.

These two versions can be compared with what the anthropologist and biologist Darrell A. Posey (1998) described as the opposition between the ‘sacred balance’ and the ‘balance sheet’, which international institutions are awkwardly attempting to bridge by an appropriation of the knowledge of indigenous peoples in a moment in which their practices are greatly threatened. But while the accounting of the latter can easily be completed and closed, the former cannot but remain an ongoing achievement. Finding the balance, in the present and between the futures, is therefore an ever-renewed operation of articulation, tensioning and maintaining of situated forms of knowledge, contradictory ethics and delicate world-making politics.

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Annexes

A) Interview guide

The following interview guide contains the basis on which each interview guide specific to each interviewee was built on, and was designed in particular for interviews with compensation experts. Depending on the situation, many other questions were added, and other were removed.

- **Current work / situation**

- Cual es su trabajo, formación, desde cuando, que otros trabajos hizo antes, porque quizo trabajar acá, etc..

- **Biodiversidad**

- Como ve la evolución de la biodiversidad en Colombia? como se vincula con el resto del mundo
- Cuales son las perspectivas para el futuro? cual son los objetivos?
- Como estas perspectivas impactan lo que se necesita hacer hoy día?
- Que es la biodiversidad para usted? como se relaciona con los seres humanos (y a que les sirve)?
- Como ve la evolución histórica de las maneras de manejarla? (incluso con las variaciones culturales)
- Cual cambios desde el medio del siglo XX? que es la diferencia entre cuidar la biodiversidad y proteger el medio ambiente?
 - Como usted ve las maneras actuales de preocuparse de la biodiversidad o del medio ambiente? (percepción/acciones del estado, organización institucional/contexto..)
 - Cual es la importancia de la biodiversidad? como esta importancia evoluciono?
 - Colombia como segundo pais mas biodiverso: cuales son las implicaciones?

- **Compensaciones**

- **El Manual**

- **Desarrollo del Manual**

- Cual es el origen del manual? (quien, como, donde, que era la idea inicial, como se transformo..)
- Quien fueron los actores?
- Con cuales objetivos? no solo los objetivos técnicos sino los al nivel de la sociedad?

- Cual rol las compensación debe tener en el marco de las variedades de acciones del Estado para la protección de la biodiversidad?
- Y dentro de la evolución histórica de las leyes para la protección del medio ambiente?
- Cual relaciones entre las actividades productivas y la biodiversidad?
- Cual papel de las empresas (real, deseado por el estado, ellas, la sociedad...)?
- Cual papel personal? primer, segundo manual?
- Porque esta alianza con ONGs? que es lo que traen? de cual manera el objetivo de estas ONGs puede coincidir con el del estado colombiano?
- Como o porque los conceptos de no perdida neta, jerarquía de la mitigación, etc.. que fueron inventados en los estados unidos lograron a llegar a Colombia? son conceptos universales? cual es su opinion personal
- Cuales fueron los debates acerca del diseño del primer manual dentro del equipo que tenia que armarlo, si lo sabe?
- Cuales fueron los arbitrajes que el ministerio o el gobierno tuvieron que hacer?
- Cuales fueron los debates dentro de las camaras y con los diputados?
- La introducción habla mucho de la importancia de la biodiversidad para los seres humanos, pero el manual hace una separación bastante fuerte entre lo que concierne los humanos, que es incluido, y lo que concierne el resto de la biodiversidad.. porque esta separación?

- Aspectos técnicos

- Cuales fueron las dificultades para adaptar los conceptos de las compensaciones a la situación y cultura colombiana?
- Que particulares locales? (sociales)
- Que problemáticas al nivel del conocimiento de la biodiversidad en Colombia?
- Cuales fueron las adaptaciones que han sido necesarias de hacer?
- Como difiere el enfoque colombiano sobre este tema en relación con lo que se hace en los paises vecinos? porque?
- Cual es el papel de los humanos dentro de la aplicación del manual?
- Rol de los que hacen estudios: cual objetividad o subjetividad?
- Rol de los que son impactados?
- Para que participen al desarrollo de la medidas?
- Para que sus puntos de vista y relaciones con el lugar sea tomado en cuenta?
- Parece que no existe de integración de los valores sociales de los lugares, pero que son solo vistos a partir de los criterios..?
- Como se toma en cuenta los impactos de un proyecto? hasta donde llega? y porque este limite del enfoque? (por ejemplo puerto que va a permitir mas exportaciones de carbon o aceite de palme, o proyecto hidroeléctrico que impacta mucho mas a bajo los ecosistemas)..
- Factores de compensación
- La adicionalidad: que es y como se demuestra? Usted piensa que es un concepto solido o de que depende?
- Porque la necesidad de un segundo manual, que aporta?
- Cual diferencia entre la biodiversidad y el “componente biotico”?

- Cuales fueron las “lecciones aprendidas”?
- En que consistieron los debates después del primer manual
- Que es lo que había que cambiar
- Como usted percibe el manual actual
- Cuales son los desafíos y cuellos de botella

- Sobre los talleres y consultas...

- Quien los organizo, cual contenido, para que ?

- Que significa el uso sostenible de la biodiversidad?

- Con que tipo de acciones intenta promover eso? (cual es lo que se necesita, a todos los niveles, para llegar a eso?)
- Cuales son los desafíos?
- El objetivo es posible? Como?
- Como este tema se vehicula con los otros temas y desafíos de la sociedad colombiana? (pobreza, paz, cambio climático..)
- Es decir también, cual es la big picture en la cual se puede analizar la problemática de la biodiversidad en Colombia?

- Compensaciones en general

- Cuales son los debates internos al ministerio sobre este tema? fácil, no fácil, peleas o no, sobre que..?
- Cual es su posición personal? Bien, mal, necesario? Porque?
- Que significa compensar? esta compensación legitima las destrucciones? porque si, porque no?
- Cual es la relación entre lo que es destruido y lo que es hecho para compensar
- Son necesarias las compensaciones para brindar financiamiento a los proyectos de conservación? Entonces seria necesario destruir para proteger? O como es? Porque conservar cuesta, y destruir no?
- En teoría, la no perdida neta implica que no pueden existir impactos no compensables... Esto es verdad? Cual es el limite entre lo que se puede compensar y lo que no?
- El manual define la no perdida neta como el punto donde se balancean las perdidas con las ganancias... que significa?
- El manual para ser mas claro adjunta la definición de la academia real española para “balancear: igualar o poner en equilibrio, contrapesar”... Porque es necesaria esta definición? Como esto se hace hablando de la biodiversidad?
- Cual es la importancia de la herramienta de las compensaciones para la biodiversidad y tomando en cuenta todo lo que existe como otras acciones? (pequeña, secundaria, primordial?)

- Ejemplos de compensaciones/ practica

- Cual es la relación entre la teórica y la practica?
- Cual son los desafíos mas grandes para aplicar las compensaciones en practica?

- Parece que el manual es bastante preciso pero al final cual es la libertad de decisión de los que van a decidir la compensaciones apropiadas? (la ANLA por ejemplo..) como estar seguro que todo esta homogeneizado cuando cada lugar es muy especifico?

- De la misma manera, la ANLA se presenta como una institución objetiva, pero cual es la influencia de los políticos, o de los hechos políticos, sobre la evaluación de impactos ambientales, de compensaciones y finalmente de validación de licencias ambientales o no?

- Ejemplos y problemas con la elaboración de planes de compensación

- Problemas para las empresas

- Problemas para la ANLA

- Problemas para las comunidades

- Ejemplo bueno recién

- Ejemplo malo recién

- Es posible lograr el objetivo de no perdida neta? Si no, a que sirve? No es contraproducente si en realidad no es posible?

- Cual es la relación entre los impactos de un proyecto sobre el medio ambiente y sus aportes (y que son estos aportes?). Y con los impactos humanos? Como se puede saber lo que es justo hacer?

- Cual es el impacto del desarrollo de las políticas de compensaciones sobre las maneras de tomar en cuenta la naturaleza? O a que movimiento mas largo esto participa? O en que movimiento mas largo esto se integra?

B) Documents produced for the ANLA

a) Letter for gaining access



Dianoux Robin
GSPR - EHESS
105 boulevard Raspail
75006 Paris
Francia

Destinatario:
AUTORIDAD NACIONAL DE LICENCIAS AMBIENTALES
Calle 37 No. 8 – 40 Bogotá, D.C. Edificio Anexo
Código Postal 110311156

Bogotá, el 06/07/2018

Asunto: Solicitud de autorización para asistir a actividades de la ANLA como observador en la cualidad de estudiante de doctorado trabajando sobre las compensaciones ambientales en Colombia.

Estimado/a Sr./Sra.,

Soy estudiante de doctorado en sociología de la universidad EHESS en París, Francia, y la investigación que estoy haciendo para mi tesis tiene como foco el desarrollo de las políticas de "compensaciones por pérdida de biodiversidad" en Colombia. Después de haber trabajado sobre el tema del desarrollo sostenible de manera general, me pareció importante de ver como este concepto está aplicado al manejo de la biodiversidad, un tema que tiene cada vez más importancia en los discursos y las políticas de los países del mundo pero que sigue al mismo tiempo increíblemente amenazada. Un instrumento fundamental de estas políticas, que se está difundiendo en un gran número de países, pero con un número de especificidades locales, son las compensaciones ambientales, un tema sobre el cual Colombia ha elegido posicionarse como un líder regional. De hecho, estas 'compensaciones' deben permitir de seguir el desarrollo del país, es decir la construcción de nuevas carreteras, minas, represas hidroeléctricas, etc. sin comprometer el medio ambiente y, en particular, la biodiversidad.

En relación con mi proyecto, estoy interesado específicamente las relaciones entre el desarrollo de esta herramienta y la evolución de la ética en relación con la biodiversidad, es decir la evolución de lo que se considera con una manera justa de manejarla. Para mí, una manera de investigar esto es de estudiar como se atribuyen las licencias ambientales y como se negocian las compensaciones relacionadas. Estoy entonces muy interesado de saber más sobre el trabajo que la ANLA hace y, más específicamente, la manera con la cual se evalúan las compensaciones por pérdida de

biodiversidad que están contenidas en las solicitudes de licencias ambientales que recibe la ANLA.

De acuerdo con la información que me fue comunicada, el proceso de licenciamiento requiere una serie de pasos, algunos de los cuales son de particular interés para mí: reuniones de información con empresas que desean tener alguna aclaración sobre el funcionamiento de las compensaciones; reuniones con las empresas que vienen presentar su solicitud y las medidas que toman acerca del manejo ambiental de sus proyectos; reuniones internas a la ANLA con especialistas para evaluar la calidad del EIA; audiencias de información adicional del proyecto; visitas con personas de la ANLA sobre el sitio del futuro proyecto; y visitas anuales de seguimiento de las acciones de compensación.

Para mí, todos estos pasos pueden brindar mucha información sobre las maneras de entender y de poner en práctica las normas relativas al manejo del medio ambiente y a las compensaciones que deben implementarse cuando el daño no se puede evitar. Entonces me parece que, además de las entrevistas que planeo hacer, el hecho de tener la oportunidad de asistir a algunas de estas reuniones y visitas de campo sería absolutamente esencial para llevar a cabo mi investigación, y por lo tanto quisiera solicitar su autorización para participar en ellas como observador.

A pesar del hecho que esta solicitud podría quizás aparecer cómo extraña o fuera de lugar, este modo de investigación es muy común dentro de las ciencias sociales y es en absoluto esencial para poder estudiar y lograr a entender las formas con las cuales las administraciones funcionan y tratan de cumplir con las misiones asignadas a ellas. Estoy obviamente dispuesto a cumplir con todas las condiciones que pueda tener, incluido el respeto por la confidencialidad de los proyectos si lo desea.

Me pongo a su disposición si desea obtener primero más información sobre mí, mi investigación o para cualquier otra pregunta que pueda tener antes de responder a mi solicitud. Muchas gracias de antemano por la atención que le puede brindar.

Atentamente,

ROBIN DIANOUX

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b) Work plan

This document had been produced at the request of the manager of the compensation group of the ANLA in order to clarify my motivations for doing a fieldwork at the ANLA and to allow him to better understand my (quantifiable) needs in term of specific access (like the number of meetings with companies I would like to observe, for example) and the timeline (and end) of the rest of my fieldwork.

PLAN DE TRABAJO PARA UNA INVESTIGACION EN LA AUTORIDAD NACIONAL DE LICENCIAS AMBIENTALES - ANLA February 2019

Nombre del investigador: Dianoux Robin

Posición: Estudiante aspirante a doctorado en Sociología

Instituciones: EHESS (GSPR), Paris, Francia

Universidad de Milano, Italia

Tema de la investigación: Aplicación de los instrumentos o herramientas que se usan para la asignación y seguimiento a la compensación por perdida de Biodiversidad en Colombia

1. A) Interés para realizar un trabajo de campo en la ANLA para mi tesis de doctorado

La investigación que se pretende realizar, tiene como foco el desarrollo de las políticas de “**compensaciones por perdida de biodiversidad**” en Colombia. Después de haber investigado el tema del desarrollo sostenible de manera general, se consideró importante ver como este concepto está aplicado al manejo de la biodiversidad, un tema que tiene cada vez más importancia en los discursos y las políticas de los países del mundo pero que sigue al mismo tiempo increíblemente amenazada. Un instrumento fundamental de estas políticas que se está difundiendo en un gran numero de países, pero con muchas especificidades locales, son las compensaciones ambientales y en particular las compensaciones por perdida de biodiversidad (equivalente a las se denominan “biodiversity offsets” en ingles. Colombia se volvio un líder regional sobre este tema con el desarrollo del “Manual de las compensaciones por perdida de biodiversidad”, que fue adoptado mediante la resolucion 1517 de 2012 del Ministerio de Ambiente y Desarrollo Sostenible. De hecho, estas “compensaciones” llevan la promesa de permitir el “desarrollo del país”, es decir la construcción de nuevas carreteras, minas, represas hidroeléctricas, etc. sin comprometer el medio ambiente y, en particular, la biodiversidad.

En relación con mi proyecto, estoy interesado específicamente en las relaciones entre el desarrollo de esta herramienta y la evolución de la ética en relación con la biodiversidad, es decir la evolución de lo que se considera una manera justa de manejarla. Para mí, una manera de investigar esto es de estudiar cómo se otorgan

las licencias ambientales y como se definen las compensaciones relacionadas. Estoy entonces muy interesado por el trabajo que la ANLA hace y, más específicamente, la manera con la cual se evalúan las propuestas de compensaciones por pérdida de biodiversidad relacionadas con las solicitudes de licencias ambientales, porque es un muy buen ejemplo para estudiar y encontrar parte de las respuestas a lo que me preocupa.

Estudiar las acciones de la ANLA puede permitirme ver ciertas etapas, niveles y escalas por los cuales pasa un pensamiento ético general relacionado con la “preservación” de la “biodiversidad”, que incluye una visión particular del mundo y de lo que somos humanos, hacia ideas de manejo específicas inscritas en teorías e historias particulares, que son luego convertidas en instrumentos legales específicos que deben ser usados dentro de una institución, la cual tiene que hacer la interfaz entre una teoría convertida en ley y las maneras “científicas” con las cuales esta puede aplicarse en la práctica, implicando un gran número de detalles legales, técnicos, administrativos o normativos que son después apropiados por trabajadores con su propio entendimiento de ellos y sus propias ideas sobre lo que es el “medio ambiente”, las relaciones humanas, el contexto del país y que tienen obviamente una cultura propia.

Para fines de entender el real interés de este tipo de estudio, hay que recordar que toda esta organización es intrínsecamente localizada en el tiempo y en el espacio. No tiene nada de absolutamente objetivo, verdad o universalmente justo o moral. Entonces tiene una historia y una vida totalmente ligada a su entorno de vida, igual que los animales y sus ecosistemas, para hacer una comparación metafórica. Por lo tanto en este caso mi trabajo se inscribe en el contexto del estudio de las características de las relaciones entre estas diferentes partes, escalas, etapas, pensamientos, y como han coevolucionados, aunque mi investigación guarda un objetivo en alcance más modesto dentro de esto. Del punto de vista de las ciencias sociales, este tipo de estudio proviene de varias corrientes de investigación y entre otros la etnografía, la sociología de las ciencias, el estudio de las controversias técnicas, la sociología de la administración y la etnometodología. A pesar del hecho que la manera con la cual estoy pensando mi trabajo a la ANLA (y en particular la observación y la atención a muchos detalles que muchas veces no parecen pertinentes para la gente que vive las situaciones observadas) podría quizás aparecer cómo extraña o fuera de lugar, este modo de investigación es muy común dentro de las ciencias sociales y es en absoluto esencial para poder estudiar y lograr a entender las formas con las cuales las administraciones (y los humanos que la hacen vivir) funcionan y tratan de cumplir con las misiones asignadas a ellas.

1. B) Objetivo y alcance de la investigación dentro de la ANLA

El trabajo de investigación que estoy actualmente haciendo en la ANLA y por el cual es un honor haber sido autorizado, me permitirá completar otras partes del trabajo de campo que realizo para mi tesis de doctorado. Este trabajo de campo al cual mi investigación a la ANLA participa, tiene como objetivo coleccionar datos en forma de notas, entrevistas, fotos, videos, informaciones y documentos pertinentes para la análisis que me propongo hacer en relación con las preguntas de investigación a las cuales mi tesis intenta responder.

El proceso de licenciamiento y sus corolarios requiere una larga serie de pasos y para mí todos estos pasos pueden brindar mucha información sobre las maneras de entender, justificar y poner en práctica las normas relativas al manejo del medio ambiente y a las compensaciones que deben implementarse cuando el daño no se puede evitar. Algunos de estos pasos son de particular interés para mí porque pueden ser momentos claves

o porque son situaciones en las cuales los actores expresan con una intensidad particular sus maneras de percibir y actuar en relación con la tarea que tienen que hacer. Por ejemplo: reuniones de información con empresas que desean tener alguna aclaración sobre el funcionamiento de las compensaciones; reuniones con las empresas que vienen a presentar su solicitud y las medidas que toman acerca del manejo ambiental de sus proyectos; trabajo de los especialistas para evaluar la calidad de un plan de compensación, y reuniones formales o informales internas a la ANLA sobre asuntos particulares relacionados con esta evaluación; audiencias públicas; audiencias de información adicionales de los proyectos; visitas de las personas de la ANLA sobre el sitio del futuro proyecto en evaluación y de las zonas de futuras compensaciones; visitas de seguimiento de los proyectos y de las acciones de compensación. Las visitas son extremadamente importantes porque son el momento en el cual se hace un paso del proyecto de papel a su inscripción en un lugar real y preciso, y a la articulación y correspondencia de los dos. Mas allá de eso, me interesa también el trabajo de mas largo plazo que hace la ANLA para trabajar a la evolución de las compensaciones y de sus relaciones con la sociedad civil y las otras instituciones y ONGs, porque es una actividad que da una vista privilegiada sobre los desafíos que expresan los actores, en función del análisis que hacen de la sociedad y la comprensión de su relación con el entorno natural.

Concretamente estoy contemplando la posibilidad de participar a:

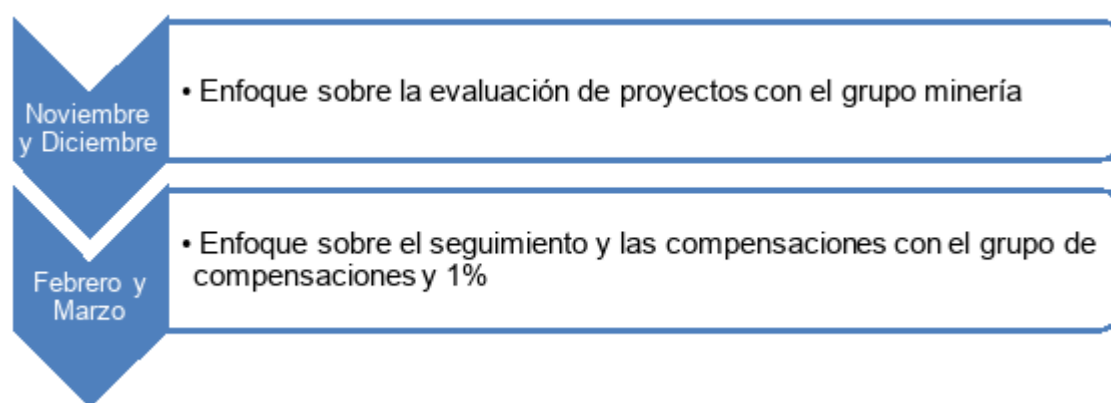
1. Reuniones de profesionales del grupo de compensaciones con empresas y usuarios (unicamente como observador)
2. Reuniones de la ANLA con otros actores externos sobre temas relacionados con compensaciones (posiblemente en mi nombre propio si son al exterior de la ANLA)
3. Reuniones o debates informales genéricas sobre la compensación
4. Debates sobre un caso particular (sin comprometer a la ANLA)
5. Preguntas a los especialistas de manera informal o en forma de una entrevista.
6. Visitas de evaluaciones o seguimiento que incluyen visitas a áreas de compensación.
7. Talleres internos o externos con la ANLA.
8. Otros eventos o eventos de los cuales no tengo conocimiento (involucrando la participación de las comunidades, por ejemplo y unicamente como observador)

Tambien me gustaria poder:

1. Discutir el estudio de un plan de compensación y la redacción de un concepto técnico (incluso las etapas involucrando más de un especialista, como el trabajo cartográfico por ejemplo)
2. Acceder a ciertos archivos de la ANLA que no se encuentran en VITAL, y consultar documentos intermediarios de analisis de los planes de compensaciones, como informes geograficos por ejemplo, guardando a la mente su carácter confidencial.
3. Hacer algunas entrevistas: a parte de las que ya hice, de las que he previsto de hacer con especialistas que trabajaron sobre el Proyecto Hidroeléctrico el Quimbo, seria también muy útil poder concretar las entrevistas con el Dr. Acevedo y el Ing. Montealegre, y de hacer a lo menos dos entrevistas con miembros del grupo de compensaciones

1. C) Cronograma de trabajo

Si todos los eventos salen de seguida en las próximas semanas podría que no necesite mas de un mes para completar mi trabajo con la ANLA. Pero existen muchas incertidumbres, ya que eso va a depender mucho de las reuniones que van a estar programadas, los planes que van a llegar para la evaluación, los talleres que se van a organizar, las visitas que van a pasar (y de las cuales voy a estar informado y ojalá invitado, lo que puede ser a veces difícil considerando que muchas no son hechas por el grupo de compensaciones). Me gustaría asistir a un buen numero de reuniones pero un taller, un estudio de plan de compensación con una persona del grupo podrían ser suficientes. También una visita de campo (además de la que ya hice pero que no incluya compensación) realmente interesante podría ser suficiente pero dependiendo de las posibilidades dos serian aun mejor.



ACTIVIDADES	Numero	Hecho	Observaciones
Asistencia a reuniones con Usuarios	10	3	10 o hasta finales de Marzo
Asistencia a reuniones de grupo de compensaciones	Hasta finales de marzo		
Entrevistas a Lideres del grupo de Compensaciones	2	1	Yesenia y Emilio
Entrevistas a miembros del grupo de Compensaciones	2	0	Possiblemente Carolina y Gabriel
Discussiones sobre el la analisis de planes y conceptos tecnicos	3	0	Possiblemente Carolina y Gabriel
Visitas a Campo evaluacion	1	1	Mina Sator
Visitas a Campo seguimiento/compensacion	2	0	Drummond + otra

Talleres/capacitaciones internos sobre compensaciones	Los que hay hasta finales de marzo	0	
Talleres externos sobre compensaciones	Los que hay hasta finales de marzo	0	
Observacion/ethnografia	Hasta finales de marzo		

1. D) Entregable

Estoy muy agradecido de antemano a todas las personas que me ayudaran en mi trabajo de investigación de campo de la ANLA, tomando de su tiempo para ayudarme, invitarme o facilitarme el acceso a los eventos mencionados. Considerando el enfoque de mi investigación, no estoy seguro de la manera con la cual podría devolver la ayuda que me aportaron de una manera que haga sentido. De hecho, mi investigación no es del tipo “aplicada”, y entonces seria difícil de entregarlos algo que podría ser directamente útil para su trabajo cotidiano. A pesar de esto seria un gusto presentar antes de terminar el periodo de investigación a la ANLA, unas partes de mi trabajo y de lo que “vi” a la ANLA, o de presentar unas reflexiones sobre las relaciones entre ética e instrumentos, o de hacer un pequeño estudio técnico-filosófico sobre las maneras de adicionar las partes de un banco de hábitat, o cualquier otro tema que les podría servir. Dependiendo de las discusiones con mi tutor a la ANLA, el Dr. Acevedo, y con el Ing. Montealegre, yo podría también elaborar un documento de memoria de mi trabajo de investigación a la ANLA.

ANLA
INFORME CONSOLIDADO PRACTICANTES - PASANTES

NOMBRE DEL ESTUDIANTE:		Robin Dianoux		UNIVERSIDAD:	Universidad de Milano / EHESS
FACULTAD:	Sociología	FECHAS DE PRÁCTICA (Desde - hasta)		8/11/2018 - 22/04/2019	
DEPENDENCIA:	Seguimiento y evaluación	TUTOR:	Dr Guillermo Acevedo M		
ACTIVIDADES ASIGNADAS O ACORDADAS	ACTIVIDADES REALIZADAS QUE DAN CUMPLIMIENTO A LOS COMPROMISOS	CUMPLIÓ CON LAS EXPECTATIVAS	OBSERVACIONES		
	<p>Observacion general: Se asignaron actividades de proyectos del sector de Minería, Hidrocarburos, Energía y Infraestructura.</p>		<p>La práctica que se ejecutó es la primera fase de la investigación para mi doctorado. Consistió en particular en recopilar información, realizar vistas de campo, revisiones documentales, entrevistas con ciudadanos, funcionarios de la Anla y de algunas empresas. Con esta información, luego procedera a formular el documento propio de la investigación, la cual estará más enfocada a evaluar las experiencias de las compensaciones a nivel técnico, legal, ambiental y socio económico.</p>		
Revisión documental	Se revisaron documentalmente un gran número de expedientes, con un foco sobre los EIA, evaluaciones y compensaciones.		Debido a que no tuve acceso al SILA, la revisión documental no fue siempre fácil, pero logré recuperar buena parte de los documentos que necesitaba a través de VITAL o de la ventanilla para el público		
Observación de Audiencias Públicas	Tuve la oportunidad de asistir a la Audiencia Pública del Proyecto LAV004-00-20 en Tabío, Cudrimamarca, en la cual se expuso por parte de la comunidad las oposiciones al proyecto				
Observación de reuniones internas o solicitadas por usuarios	Se reunió con parte de los equipos evaluadores, de los equipos de seguimiento ambiental y de los equipos del grupo 1% y compensaciones	SI			
Observación de reuniones de simulacro y de solicitud de información adicional	Tuve la oportunidad de asistir, por cuatro expedientes, a varias reuniones de preparación de reuniones de información adicional, de simulacro así que las reuniones mismas con los usuarios.				
Observación etnográfica	Observación en las oficinas de la ANLA del trabajo individual o en grupo de los evaluadores y de reuniones informales.				
Visitas de campo	Realice cuatro vistas de campo, de dos a cuatro días, con los profesionales de la ANLA: -al proyecto LAV0060-00-2018 localizado en el Municipio de Puerto Libertador, Cordoba (evaluación) -al proyecto LAM4090 localizado en el Municipio de Garzon, Huila (conformación de mesa de trabajo) -al proyecto LAM2981 localizado en el Municipio de San Luis de Gaceno, Boyacá (seguimiento) -al proyecto LAV0064-00-2015 localizado en el Municipio de Barranquilla, Atlántico (seguimiento)				

c) Final report

d) Ronda sostenible

Extract from the weekly internal bulletin of the ANLA, for which a person from the communication department interviewed me. ANLA, 08/04/2019, Ronda Semanal #124.



¿Qué hace un francés en la ANLA?

Robin Dianoux, estudiante de doctorado de origen francés, lleva varios meses haciendo su pasantía en el Grupo de Inversión 1% y Compensaciones de la entidad, en entrevista, nos contó qué le atrajo de Colombia, de la ANLA y de este grupo de trabajo.

¿Qué razones lo trajeron al país?

Lo que me atrajo de Colombia fue el tema de las compensaciones, es mi tema de investigación para mi doctorado. Siguiendo un poco la investigación para saber a qué país podía ir, descubrí que en América Latina estaba Colombia con la reputación de ser el más adelantado sobre el tema de las compensaciones.

¿Qué opina de la ANLA y de las personas del grupo?

Son profesionales que realmente son muy expertos en el tema sobre el cual están trabajando y que obviamente están haciendo su trabajo de la mejor manera, son muy juiciosos con lo que hacen.

¿Cómo es su día a día en la ANLA?

Trato de venir casi todos los días y estoy allí, en el sillón donde usted me encontró, solo observando lo que pasa, hablando con la gente y a veces asisto a algunas reuniones para conocer los diferentes puntos de vista y sobre el trabajo, les pregunto si puedo acercarme y escuchar los temas a discutir y tomar notas para que la gente aprenda también de por qué estoy acá.



Hablemos sobre su vida personal y trayectoria...

Tengo 35 años, hice un Máster de Antropología cuando estaba más joven siguiendo el ciclo normal de estudios y después encontré una formación en realización de películas documentales y me pareció bastante apropiado, teniendo en cuenta mi gusto por la Antropología, luego de un par de años hice una formación complementaria en Francia, después fui a vivir a Canadá trabajando por unos años en una productora de este tipo de películas, haciendo posproducción montaje y todo esto, más adelante trabajé en fotografía documental y aún tenía muchas preguntas sobre todo a nivel de ecología, así que con más calma busqué la oportunidad de becas en una universidad de Italia y ahora estoy haciendo un doctorado en "cotutela" entre mi universidad en Italia (Milán) y en Francia en la Escuela de Altos Estudios en Ciencias Sociales en París, sobre el tema de las compensaciones ambientales.

¿Y la familia?

Me apoya y está contenta de que encontré esta oportunidad de hacer un doctorado, ya que en Francia a esta edad es difícil encontrar este tipo de becas, fue mucha suerte y mi familia siempre está feliz cuando estoy haciendo algo que me gusta, encontrar un trabajo y poder descubrir otros países.

