



A regional approach to drought index-insurance in Intergovernmental Authority on Development (IGAD) countries

Volume 1: Main report – Operational and technical feasibility assessment



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A regional approach to drought index-insurance in Intergovernmental Authority on Development (IGAD) countries

Volume 1: Main report – Operational and technical
feasibility assessment

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Acronyms and abbreviations

AfDB	African Development Bank
ARC	African Risk Capacity
ASALs	Arid and semi-arid lands
BMZ	The German Federal Ministry for Economic Cooperation and Development
BRACED	Building Resilience and Adaptation to Climate Extremes and Disasters
DIRISHA	Drought Index-insurance for Resilience in the Sahel and Horn of Africa
DRSLP	Drought Resilience and Sustainable Livelihood Programme for the Horn of Africa
eMODIS	Enhanced moderate resolution imaging spectroradiometer
EU	European Union
FAO	Food and Agricultural Organization of the United Nations
FCDO	Foreign, Commonwealth and Development Office
GDP	Gross domestic product
HSNP	Hunger Safety Net Program
IBLI	Index-based livestock insurance
ICPALD	IGAD Centre for Pastoral Areas and Livestock Development
IDDRSI	IGAD Drought Disaster Resilience and Sustainability Initiative
IFAD	International Fund for Agricultural Development
IGAD	Intergovernmental Authority on Development
ILRI	International Livestock Research Institute
KLIP	Kenya Livestock Insurance Program
NGO	Non-governmental organization

NDVI	Normalized Difference Vegetation Index
SIPE	Satellite Index Insurance for Pastoralists in Ethiopia
UK	United Kingdom
USAID	United States Agency for International Development
WBG	World Bank Group
WFP	World Food Programme

Executive summary

This report assesses the operational and technical feasibility of a regional index-based livestock insurance (IBLI) program for pastoralists located in the Intergovernmental Authority on Development (IGAD) region.¹ This desk study has been prepared by the International Livestock Research Institute (ILRI) under the Drought Index-insurance for Resilience in the Sahel and Horn of Africa (DIRISHA) research program. The work has been supported by the United Kingdom Foreign, Commonwealth and Development Office (FCDO).

The problem

Pastoralists are a key population group and economic factor in the Greater Horn of Africa. In the eight IGAD countries, up to one fifth of the total population – or 50 million people – is made up of pastoralists or agro-pastoralists. Their main source of livelihood is the rearing of livestock, mostly in open grazing rangelands in semi-arid areas. In most IGAD countries, livestock contributes more than one third of agricultural gross domestic product

(GDP) and in Djibouti and Somalia more than 80% of agricultural GDP. Pastoralism is the main source of meat and milk products in most IGAD countries.

However, pastoralists suffer from widespread poverty and are severely exposed and vulnerable to recurrent droughts. Pastoralists belong to the poorest segments of society in the IGAD countries. Their resilience to droughts is low and their exposure high. In severe drought years, millions of head of livestock die from starvation due to depleted forage, diseases and lack of water, pushing millions of people into food insecurity. As severe droughts rise in frequency and severity across the region, pastoralists find themselves in a poverty trap.

Index-based livestock insurance as a potential solution

Index-based livestock insurance (IBLI) is a tested tool to build the drought resilience of pastoralists. IBLI is an insurance approach whereby livestock-owning policyholders receive payouts based on an index.² In the Horn of Africa, IBLI has been specifically designed to benefit pastoralists. The Normalized Difference Vegetation Index (NDVI) for rangeland areas, calculated from satellite imagery, is processed to derive an index of the relative availability of forage. When drought causes the index to fall below a pre-agreed threshold, policyholders in the affected area receive an insurance payout that enables them to purchase animal fodder or veterinary services to keep their animals alive despite the adverse conditions.

¹Djibouti, Eritrea, Ethiopia, Kenya, Somalia, South Sudan, Sudan and Uganda.

²For the purposes of this study, 'IBLI' is used as a generic term to describe satellite-index-based insurance products for livestock holders. This definition thus refers to the technical design of the insurance product and is free from any assumptions about its potential policyholder, purpose, or the marketing, sales and delivery channels used. Thus, IBLI has been used to describe the names of specific livestock micro-level index insurance schemes in Mongolia, Kenya and Ethiopia. IBLI – as per the definition in this study – can also describe other types of programs, targeting e.g. meso- or macro-level clients pursuing commercial or non-commercial objectives.

Since 2010, IBLI has been implemented in different forms in Kenya and Ethiopia. Four programs need to be differentiated. (i) The first IBLI program was launched in Kenya's Marsabit County in 2010. It was started as a 'micro-level' program, in other words as a program that sold policies to individual pastoralists and was aiming to be commercially sustainable. Pastoralists were charged the actuarially fair price based on the expected claims payouts but did not receive any other form of direct premium subsidy. (ii) This was followed by the introduction of micro-level IBLI in southern Ethiopia in 2012, which again charged pastoralists the actuarially fair premium price. (iii) After first experiences could thus be gathered, the Government of Kenya decided to use public resources to purchase IBLI on behalf of vulnerable pastoralists to protect them against drought. This 'modified macro-level' program, under which payouts are made directly to the pre-identified and registered beneficiaries, was called the Kenya Livestock Insurance Programme (KLIP) and was launched in 2015. The Government of Kenya fully financed the premiums for 5 tropical livestock units (TLUs) belonging to these vulnerable pastoralists. (iv) Finally, the modified macro-level approach was also adopted in Ethiopia. In 2018, the World Food Programme (WFP) in conjunction with the Government of Somali Region in Ethiopia launched the Satellite Index Insurance for Pastoralists in Ethiopia (SIPE) program. Through SIPE, WFP purchases IBLI coverage for vulnerable pastoralists in the region.

This study has reviewed the IBLI-based schemes in Kenya and Ethiopia to highlight a number of lessons learned that should feed into the design of any new IBLI initiative in the IGAD region. The micro-level IBLI and modified macro-level KLIP and SIPE programs have made major payouts to pastoralists during severe drought seasons in 2011/12, 2014/15 and between 2016/17 and 2018/19. Various scientific evaluations of the programs have shown that they are successful in helping insured pastoralists cope with the effects of drought shocks and protect their herds during shock years. Thus, there is proof of concept that the product works. However, the programs have experienced a series of major challenges, and any future IBLI program should ensure to address these carefully. Lessons learned include the need for the following.

- **Stronger linkages between macro- and micro-level IBLI programs.** The existing micro-level programs have struggled hard to reach scale despite significant subsidization of their operational costs by donors over 10 years and a great deal of experimentation to address the challenges. One remedy could be to operate the macro- and micro-level schemes – which are underwritten by the same insurers – more as one, rather than as separate schemes. This could boost scale significantly. Opportunities include the following. (i) **Governments should consider buying multi-year (rather than annual) modified macro-level insurance contracts** to support the building of micro-level distribution channels. As the insurers are the same for both types of programs, insurers are thus provided with a longer planning horizon and can invest more in micro-level distribution networks. (ii) In addition, **incentives or conditions should be established encouraging insurers to invest more in micro-level distribution** – e.g. by allocating subsidies for the macro-level program proportionally to the number of micro-level policies sold. Insurers could also be required to invest a certain share of the macro-level premium they receive into distribution infrastructure. (iii) **A clear beneficiary graduation strategy from fully funded modified macro-level programs should be established from the start.** This can help facilitate a gradual transition of beneficiaries into micro-level voluntary IBLI, which requires individual financial contributions. (iv) **Awareness creation and financial literacy education as provided under the modified macro-level program can also benefit usage of the micro-level program.** This has been evidenced for KLIP.
- **New micro-level distribution channels.** So far, the micro-level policy programs have operated at a major financial loss. The unit costs of IBLI promotion, awareness and education, policy issuance, and premium collection with individual pastoralists have exceeded the premium generated from each micro-level policy sale. In order for micro-level IBLI programs to operate at a commercial profit, they will require new and more cost-effective ways of marketing and delivering cover to clients. Of the options analysed in this study, the potential for meso-level insurance may hold the greatest promise. This entails selling policies to risk aggregators such as pastoralist cooperatives, rural finance institutions or livestock services organizations (e.g. providing veterinary, drug, feed supplement services). Meso-level IBLI sales have been talked about time and again but have not been attempted so far. Meso-level sales also offer the potential of de-risking lending to pastoralists and thus of boosting investments in pastoral value chain upgrades. However, expectations should be kept low: so far, none of the many ways in which micro-level sales have been attempted has proven commercially sustainable.

- **Parallel investments in resilience building and markets.** Insurance by itself cannot build drought resilience and protect livelihoods. On the one hand, building resilience requires broader investments. These include investments in risk information (e.g. probabilistic drought risk assessments), risk reduction (e.g. improved natural resource management practices) and preparedness building (e.g. live animal offtake markets). Insurance is only one of many needed elements for a comprehensive risk management framework. On the other hand, IBLI requires certain elements to function well. Not only is there a need for more concerted financial literacy and insurance training for pastoralists, but systems for targeting and registering pastoralists also need improving. There also needs to be a strengthening of private sector markets for fodder and feed supplements as well as veterinary services. Without these, pastoralists receiving a payout are unable to use it to support their animals.
- **Following a cluster implementation approach.** Given the challenges of implementing IBLI across the IGAD region, a future regional IBLI program might initially focus on selected regions where livestock input and output services are more developed. Some such 'clusters' have already been identified by IGAD. There, certain minimum requirements are more likely to already be in place, such as the existence of fodder markets and pastoralists' access to them, a minimum level of financial inclusion among pastoralists, and minimum average herd sizes among pastoralists to ensure the usefulness of IBLI.
- **Investment in beneficiary registries.** There are only a few existing registries of pastoralists in the IGAD region. Beneficiary registration is likely to be a major challenge in any regional IBLI initiative. Policymakers could thus consider investing in the development of pastoralist household registries in the target regions following the example of the Hunger Safety Net Program (HSNP) in Kenya. Such investments will yield significant positive externalities for social protection, policy planning and national identification systems.
- **Alignment with other pastoral development initiatives.** Across the IGAD region there is a large number of disaster risk financing and drought resilience-building programs targeted at pastoralists. Any future IGAD regional IBLI approach should be closely integrated with these existing approaches to ensure complementarity and make use of operational economies of scale where possible.

Regional IBLI operational and technical assessment: key findings

There is a strong rationale to implement IBLI at the regional level, accompanied by interest from IGAD

governments. Implementing one regional IBLI scheme to build drought resilience for pastoralists across IGAD countries rather than many separate ones in each country could lower start-up and operational costs through shared product design and infrastructure, create a larger market and thus attract greater private sector interest, harness risk diversification benefits and savings on the costs of purchase of reinsurance, and contribute to promoting peace in the region. Interest from IGAD governments is strong. A major conference on drought index insurance for pastoralists was held in Addis Ababa, Ethiopia, in June 2019 and attended by senior government officials from the IGAD countries. Following this conference, major interest was expressed by the governments in developing a regional IBLI approach.

The technical feasibility assessment indicates that IBLI product design is feasible in about 53% of the IGAD region and that about 51% of the total livestock population could be insured. With reference to the IGAD total land area, Ethiopia and Sudan have the highest proportion of suitable area (23% and 24%, respectively) followed by Somalia (18%) and Kenya (15%). However, in terms of the proportion of the national herd that could be covered by IBLI, Somalia has the largest share (85%), followed by Eritrea (75%) and South Sudan (62%).

A preliminary assessment of the key operational elements for a regional IBLI initiative shows mixed levels of readiness across the IGAD region. Key findings of this study are given in Table 1 and show the following.

- Insurance markets are relatively well developed in Kenya, Ethiopia, Sudan and Uganda, but insurance penetration in all countries is still very low both for life and non-life insurance. There are effectively no insurance markets in Somalia and South Sudan. This poses a major challenge for introduction of IBLI in these countries.

- In Kenya, Uganda and Sudan, the governments are highly committed to promoting access to agricultural insurance, particularly for small-scale farmers, and the governments are therefore financing premium subsidies to make cover more affordable.
- Insurance distribution channels are weak in all rural areas in the region. In countries with experience in agricultural insurance, such as Kenya, Ethiopia, Sudan and Uganda, insurers increasingly invest in rural distribution networks, often with linkage of insurance to crop credit and inputs. Distribution channels for pastoralists, however, are less well developed, which poses a challenge particularly for micro-level IBLI sales.
- The overall degree of financial literacy and awareness of IBLI among pastoralists is low across all IGAD countries except for Kenya and Ethiopia, where some successes have been achieved via the existing IBLI programs. In Sudan and Uganda, a low share of herders is aware of and purchases traditional livestock insurance. The introduction of IBLI countries without previous agricultural insurance provision will need to be accompanied by major IBLI awareness and educational campaigns.
- In countries with an important pastoral sector, there appears to be strong buy-in and demand by governments to participate in some form of regional IBLI.

Table 1: Preliminary assessment of country readiness for IBLI across key operational elements in IGAD countries.

Operational elements	Level of readiness							
	DJI	ERI	ETH	KEN	SOM	SSN	SDN	UGA
Importance of pastoral livestock for economy	●	●	●	●	●	●	●	●
Impact of drought on livestock	●	●	●	●	●	●	●	●
Pastoralist demand/supply for livestock insurance	n.a.	n.a.	●	●	n.a.	n.a.	●	●
Effective micro-level distribution channels	●	●	●	●	●	●	●	●
Existing pastoralist beneficiary registries	●	●	●	●	●	●	●	●
Pastoralist financial literacy	●	●	●	●	●	●	●	●
Legal and regulatory insurance environment	●	●	●	●	●	●	●	●
Insurance market development	●	●	●	●	●	●	●	●
Interest from insurers in IBLI	●	n.a.	●	●	●	n.a.	n.a.	●
Finance available for premiums	●	●	●	●	●	●	●	●
Interest from government stakeholders in IBLI	●	●	●	●	●	●	●	●

● = low ● = medium ● = high

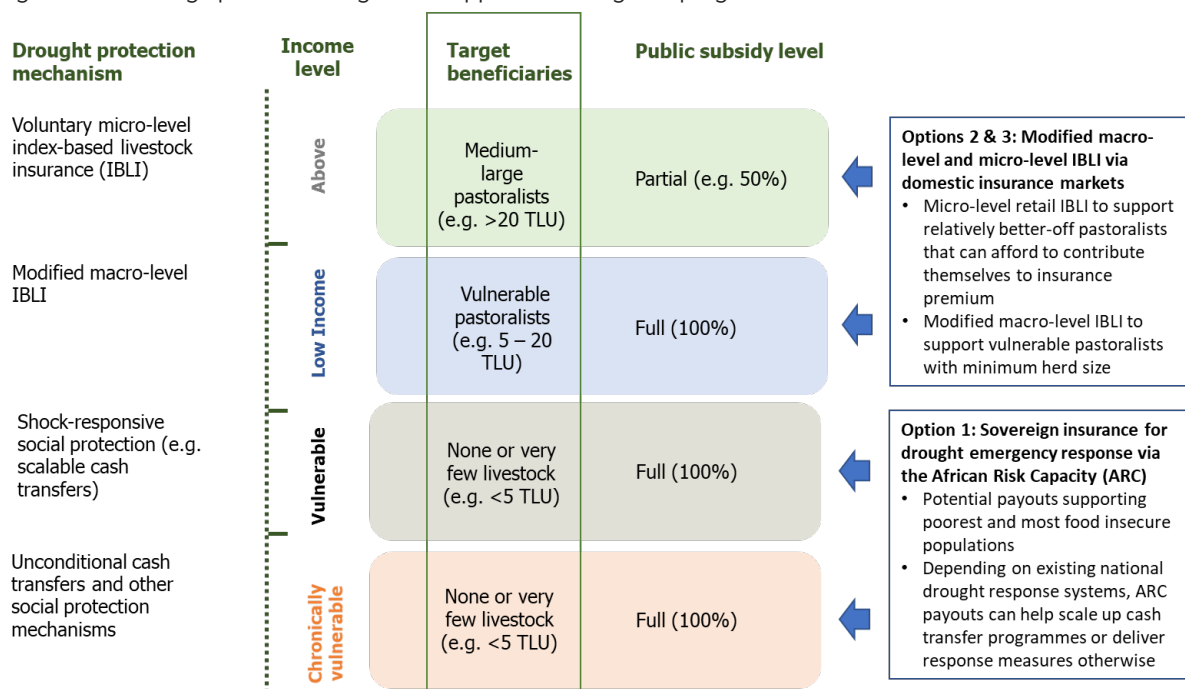
Source: Various; in country annexes, see Volume II of this report

n.a. = not available

Regional IBLI approach: structuring options, advantages and disadvantages

This study identifies and discusses three structuring options of how the IBLI approach could be used for a regional program. They target different sections of the population at risk as summarized in Figure 1 and described below.

Figure 1: Structuring options for using the IBLI approach in a regional program.



Source: Adjusted from World Bank Group 2016a.

- Option 1. Sovereign insurance for drought emergency response via the African Risk Capacity (ARC).**³ The principal objective of Option 1 would be to speed up the financing of drought emergency response for the poorest and most food-insecure populations. Sovereign drought insurance, as offered by ARC, can be a cost-effective way to achieve this. The implementation of Option 1 would be relatively straightforward. ARC has recently developed with ILRI a rangeland insurance product specifically targeting pastoralists. It already operates in the region. ARC pools risk across countries and has a panel of major international reinsurers backing the program. The roll-out would thus require relatively few investments in on-the-ground systems and procedures. Major drawbacks include that ARC would compete with the existing private sector rather than build local markets. Furthermore, in its current structure, it provides payouts to governments rather than pastoralists directly. For this latter point, in an alternative Option 1b, ARC could provide insurance payouts directly to pre-registered pastoralists. This, however, has not been implemented in any ARC country so far.
- Option 2. Modified macro-level and micro-level IBLI via domestic insurance markets.** Option 2 would aim to achieve two objectives: (i) protect vulnerable populations who own a minimum amount of livestock (e.g. 5 TLU) against the impacts of drought; and (ii) build micro-level IBLI markets that can operate sustainably with only partial subsidies. For this, Option 2 proposes for each IGAD country to follow the basic approach used in Kenya and Ethiopia, i.e. to combine a modified macro-level IBLI scheme with a micro-level IBLI scheme, with some adjustments for improved effectiveness. Regional benefits could be obtained by pooling risk across countries for reinsurance purposes, creating an IBLI index data management infrastructure, standardizing IBLI product design and rating, appointing a single entity to monitor the index during the season and act as calculation agent, and standardizing financial literacy and IBLI awareness and training programs. Major drawbacks include that countries with low insurance market development may take many years to reach a point where their industries are ready to participate in such a program. It may also be difficult to facilitate local insurers' agreements to pool risk regionally for reinsurance.

³The African Risk Capacity (ARC) is a specialized agency of the African Union established to help African governments improve their capacities to better plan, prepare, and respond to extreme weather events and natural disasters.

- 3. Option 3 (hybrid). Modified macro-level and micro-level IBLI via domestic insurance markets supported by regional insurance capacity where needed.** Like Option 2, this option would aim to protect vulnerable pastoralists and build local IBLI markets. It would be structured as Option 2 with the difference that in countries with low insurance market development and no experience to date in underwriting IBLI, an external regional insurer could act as direct insurer or co-insurer with the local market. This would also enable countries with weaker insurance market development to participate.

Table 2: Trade-offs of different regional options for index-based livestock insurance.

	Options			Comments
	1	2	3	
Protect vulnerable pastoralists (>5 TLU)	●	●	●	Option 2 and 3 propose to support vulnerable low-income pastoralists (owning herds e.g. sized 5–20 TLU) through modified macro-level IBLI and relatively better-off pastoralists (owning herds of e.g. >20 TLU) through partially subsidized micro-level commercial IBLI.
Build commercial IBLI insurance markets	●	●	●	Option 1 provides insurance coverage through a regional insurer; local markets are excluded. Options 2 and 3 work through local insurance markets. Option 3 may empower local insurers the most, as external insurance capacity is used to complement and strengthen local capacity.
Operational considerations				
Overall ease of implementation	●	●	●	Although not all IGAD countries have signed on to ARC (Option 1), it is a solution that is ready for implementation. Options 2 and 3 will require that responsible institutional structures be tasked or created and we recommend that this include a multi-stakeholder Board at the centre, as well as a technical Secretariat for implementation. Of the three options, Option 3 is likely the most complicated to operationalize because besides local insurers, a regional insurer would need to underwrite a share of risk in countries with low insurance market development.
Overall ease of technical design and servicing	●	●	●	Option 1 has a ready product and implementation design. For Options 2 and 3, product design could build on existing IBLI programs. However, the operational design would need to be conceived from the beginning.
Operationality of required stakeholders	●	●	●	For Option 1, the needed institutions exist already. For Options 2 and 3, appropriate stakeholders would need to be found or created for a series of tasks, including for overall political guidance (e.g. through a central multi-stakeholder Board), technical design and implementation (e.g. through a technical Secretariat), policy distribution and underwriting (local insurers), and calculation agent services (e.g. through a third-party service provider).
Ease of channelling donor support	●	●	●	Should donors wish to provide financial support to the regional scheme, this would be easiest through Option 1 given its relatively lean structure. For Options 2 and 3, an entity would need to be tasked with receiving and managing potential donor funds. This could for example be done through the implementing Secretariat.
Commercial sustainability	●	●	●	All three Options explored here would require continued public sector financial support. The amount required per potential IBLI beneficiary would likely be lower for Options 2 and 3, as they include the development of micro-level voluntary commercial markets. These would be aimed at operating, over time, with only partial premium subsidies (e.g. 50%).
Direct insurance payouts to beneficiaries	●	●	●	As ARC is structured at the moment, insurance payouts through Option 1 are made to the respective government which then launches an appropriate emergency response. There is an option of modifying the ARC approach (elaborated as Option 1B in the report) to provide direct payouts to pastoralists, this has, however, not been done in ARC countries thus far. For Options 2 and 3, the underwriting insurers make direct payouts to pastoralists.
Insurance distribution systems and staffing requirements	●	●	●	Operating at the national government level, Option 1 has a standing functional modus operandi for product sales. For Options 2 and 3, sophisticated commercial micro-level IBLI sales systems targeting pastoralists in remote areas are required. Experience in Kenya and Ethiopia from the last 10 years has shown that such systems tend to be complex to operate and their cost tends to be very high. Building and operating such systems will likely be more complex and costlier still in countries with lower insurance market development to start with.

	Options			Comments
	1	2	3	
Ease of achieving regional risk pooling	●	●	●	For Option 1, regional risk pooling is achieved through ARC being a single entity. For Options 2 and 3, achieving regional risk pooling would be achieved by insurers from different countries agreeing to transfer a share of risk to reinsurance together. Achieving that agreement could be facilitated by the Secretariat but may be difficult depending on insurers' preferences.
Basis risk ⁴	●	●	●	Basis risk for Option 1 is mitigated by the fact that ARC targets relatively large areas and leaves the allocation of payouts to the receiving government. Micro-level IBLI as under Option 2 and 3 targets individual pastoralists raising the risk of trigger mismatch with the situation on the ground.
Ease of IGAD country participation	●	●	●	For Option 1, currently, only Djibouti, Kenya and Sudan have signed the ARC memorandum of understanding. However, this is a relatively low hurdle to overcome for current non-signatory countries. For Option 2, some countries with particularly low insurance market development (e.g. Djibouti, Eritrea, South Sudan) may be unable to join the scheme for many years as they lack needed private sector capacity. For Option 3, this could be mitigated by participation of an external regional insurer. In some countries, such as Eritrea, participation will however remain unlikely for the foreseeable future.

Source: Authors

Option 1: Sovereign insurance; Option 2: Local markets-led approach; Option 3: Hybrid.

● = Advantage/easy; ● = Medium/medium; ● = Challenge/difficult

To choose the most appropriate structuring option for a regional IBLI approach, policymakers will have to weigh policy objectives and operational considerations carefully. Trade-offs to consider are listed in Table 2. Key takeaways include the following.

- **Option 1 would be much easier to implement than Options 2 and 3.** Arguably, the easiest way to implement an IBLI solution in the IGAD region would be to purchase sovereign insurance for each participating country through ARC. For this, needed infrastructure and products already exist and operational considerations are kept to a minimum as policies do not need to be retailed to individual pastoralists.
- **Only Options 2 and 3 support the development of domestic private insurance markets.** Of the options explored, only private sector markets can lower the drought-related financial burden on the public sector in the long term.
- **For the foreseeable future, it is unlikely that any IBLI initiative will be able to operate with no or only partial public support.** All options that were explored for this study will require long-term financial support from the public sector. This is by definition the case for Option 1 and the modified macro-level schemes under Options 2 and 3, as these are all 100% publicly subsidized. However, this is also the case for micro-level IBLI under Options 2 and 3 – international best practice shows that only agricultural insurance schemes that are at least partially publicly subsidized (e.g. at 50% of premium rates) tend to reach scale. In addition, the IBLI experience in Kenya and Ethiopia shows that stand-alone micro-level IBLI is unlikely to gain significant traction – sales costs are simply too high.

Next steps

As immediate next steps, stakeholders may consider the following points.

1. The project team could present key results of this study to IGAD governments, pastoral organizations, donors, development partners, insurers and reinsurers.
2. IGAD governments and donors could then decide on whether to take this initiative to the next phase (project preparation phase 6–12 months).

⁴ Basis risk is the difference between an index and the shock that the index is supposed to be a proxy for.' (Centre for Disaster Protection 2020). See also glossary in Annex

3. Should such a decision be positive, IGAD governments and donors could appoint a public-private and multi-stakeholder steering committee and technical working group charged with building on the findings and recommendations of this study to plan and design a regional IBLI 5- to 10-year implementation plan and budget (program preparation phase). The parties would need to establish an operational budget for this program preparation phase.
4. The steering committee and technical working group would first clearly define the objectives, scope and intended structure of the regional IBLI initiative, including roles and responsibilities of the involved stakeholders.
5. The steering committee and technical working group would then invite international reinsurance brokers to submit proposals for a regional IBLI insurance and reinsurance program (which may draw on one or more of the structural options set out in this study).
6. The steering committee and technical working group would commission a formal study by a suitably qualified international organization into the costs and benefits of alternative disaster risk financing approaches (cost-benefit analysis).
7. The steering committee and technical working group would commission a study by a suitably qualified international organization to design a monitoring and evaluation, quality assurance and impact assessment strategy.
8. The steering committee and technical working group would also work closely with the insurance regulators and private insurance associations in each of the eight IGAD countries to identify interest and support from private local insurers and regional and international reinsurers.
9. During the project preparation phase, it is assumed that the steering committee and technical working group would work closely with interested international development banks that may be willing to finance this regional IBLI initiative if a strong demand is signalled by the IGAD governments.
10. A workshop would be held at the end of the project preparation phase for approval by the key public and private stakeholders and for agreement on the formation of the multi-stakeholder board and technical secretariat which would respectively coordinate overall policy and implementation of the regional IBLI program. It is probable that key members from the steering committee and technical working group may wish to join the board and secretariat, respectively.

1. Background and objectives

This report presents the main findings and recommendations of a study assessing the operational feasibility of a regional index-based livestock insurance (IBLI) program for pastoralists located in the Intergovernmental Authority on Development (IGAD) region. This desk-study has been conducted in the latter half of 2020 by the International Livestock Research Institute (ILRI) under the Drought Index-insurance for Resilience in the Sahel and Horn of Africa (DIRISHA) research program which has been commissioned by the United Kingdom Foreign, Commonwealth and Development Office (FCDO).

This study uses a product-based definition of IBLI. For the purposes of this study, the term 'IBLI' is used as a generic term to describe satellite-index-based drought insurance products for livestock holders. This definition thus refers to the technical design of the insurance product and is free of any assumptions about its potential policyholder, its purpose, or the marketing, sales and delivery channels used. Thus, while IBLI has been used to describe the names of specific livestock micro-level index insurance schemes in Mongolia, Kenya and Ethiopia, IBLI – as per the definition in this study – can also describe new types of programs, targeting, e.g. meso- or macro-level clients pursuing commercial or non-commercial objectives.

This report is conducted against the background of a lively policy discussion on implementing IBLI at the regional level in the Greater Horn of Africa. For the last decade, IBLI has been implemented in different forms in Kenya and Ethiopia to protect pastoralists against the impacts of devastating drought. Over the last three years, the IGAD Secretariat and ILRI have hosted a series of regional conferences on IBLI at which regional governments expressed their interest in pursuing IBLI solutions themselves. The African Development Bank (AfDB) and the World Bank Group (WBG) are considering preparing large regional projects to be launched in 2021 including investments in drought resilience building. IBLI could be a component of these projects.

The key objectives of this study were the following:

1. To review the socio-economic context of the pastoral sector and its vulnerability to drought.
2. To review existing drought response financing practices in the IGAD region.
3. To assess key operational factors to regional implementation of IBLI products. This is the focus of this study, to feed into any potential preparatory considerations of such a regional IBLI initiative.
4. To provide an overview of feasibility criteria for the eight IGAD countries as a reference for future more in-depth feasibility assessments.
5. To assess key technical feasibility factors for the IBLI product design.

There are some important limitations to these study objectives. They include:

- **The report does not aim to provide a detailed implementation roadmap for a specific IBLI solution in the IGAD region.** It focuses on the more abstract question of whether the implementation of IBLI solutions is operationally feasible rather than on developing a concrete program or project. Furthermore, the scope of this report is to focus on regional aspects rather than to conduct an in-depth IBLI operational feasibility study for each IGAD country. A preliminary assessment of feasibility criteria across countries in the region is also provided but limited in its extent as COVID-19-related travel restrictions prevented country visits and consultations.
- **The scope of this study pertains specifically to IBLI and not to other drought risk financing instruments.** The authors recognize the importance of taking a holistic approach to drought risk management and financing in the IGAD region. In order to adopt the most effective solution to attain their respective policy goals, policymakers need to consider a range of different risk management and risk financing options that go beyond only IBLI. This report does not consider all of these options. Some interlinkages and overarching considerations are presented in Section 5.2, though more from the perspective of aligning existing instruments. The report aims to assess the operational feasibility of IBLI solutions; it does not aim to provide an approach for choosing the right drought risk management or financing instrument.

This report was conducted combining a desk-based study with key informant interviews. Thus, the team has relied on:

- an extensive review of the literature;
- an inception workshop to interact with a broad audience of stakeholders working on the regional IGAD drought risk finance agenda, ranging from government actors to regional representatives, regional and international private sector insurers, development organizations and academia;
- the formation of a consultative expert working group composed of selected participants of the inception workshop, including the following institutions: AfDB; the African Risk Capacity (ARC); the Centre for Disaster Protection; the Food and Agricultural Organization of the United Nations (FAO); the IGAD Centre for Pastoral Areas and Livestock Development (ICPALD); the IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI), WBG; the World Food Programme (WFP); Umma Insurance Brokers; Swiss Re; SCOR Re; and Wills Towers Watson.
- in-depth semi-structured interviews with more than 20 different stakeholders working on drought risk financing issues in the IGAD region, including local insurance companies and brokers, regional insurance companies, international reinsurers, and representatives of regional political bodies;
- questionnaires with more than 20 in-country expert stakeholders, including from ministries of agriculture, ministries of humanitarian affairs, ministries of finance, insurance regulators, development partners, livestock associations and non-governmental organizations (NGOs), inquiring about the status quo of drought risk financing initiatives in IGAD countries, the status of needed operational infrastructure for a regional approach, and the interest of stakeholders to support such an approach.
- remote sensing and geospatial data analysis to derive technical feasibility indicators.

The authors acknowledge that there is a potential conflict of interest for ILRI in writing this report. ILRI has played a key role in the development and operation of IBLI solutions in the IGAD region over the last decade. For any potential future regional scheme, ILRI may again assume a role, e.g. in technical design or implementation. The authors have, to the best of their ability, nonetheless attempted to take an objective, fact-based point of view, disregarding any ongoing or potential future involvement of ILRI in the discussed IBLI schemes. To mitigate any conflicts of interest, the document has been peer-reviewed by external parties including AfDB, the Centre for Disaster Protection, IGAD, and the World Bank. Wherever concrete roles in potential future IBLI schemes are discussed in the report, a range of potential actors to assume them was included.

The study is presented in three volumes: Volume I, which covers the main findings, conclusions and recommendations of the IBLI operational feasibility assessment for the IGAD region; Volume II: country annexes for the eight IGAD countries; and Volume III: IBLI technical feasibility assessment for the IGAD region.

The rest of this report is structured as follows. Section 2 reviews the context of livestock production and pastoralism in the IGAD region, including the impact of recurrent severe droughts on pastoral livelihoods. Section 3 presents existing livestock development initiatives in the region, key institutions relevant for drought risk financing initiatives for pastoralists, and existing drought risk financing schemes across IGAD countries. Section 4 reviews both the status of insurance market development across IGAD countries in the region, as well as the experience thus far with IBLI in the region and key lessons learned. Section 5 presents potential options for structuring a regional approach to IBLI, reviews the key operational functions that would need to be established, and explores how lessons learned from existing IBLI schemes could be integrated. Section 6 provides conclusions and recommendations, including on the way forward and possible next steps.

2. Livestock production and pastoralism in the IGAD region

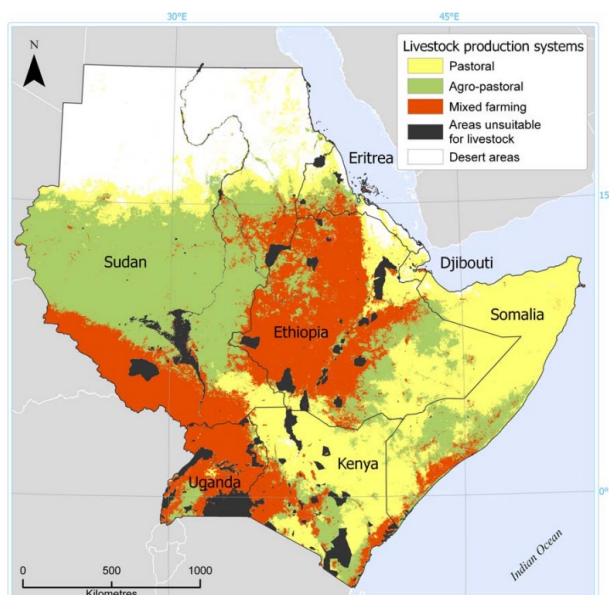
This section reviews the status of pastoral production systems in the IGAD region and the role of pastoralism.

The centrality of livestock for the economy of IGAD countries and for the welfare of pastoral households, as well as the severity of socio-economic-caused major drought events in the region are fundamental pre-requisites for justifying the importance of implementing IBLI solutions.

2.1 Socio-economic context

Large parts of the IGAD region are characterized by arid and semi-arid lands (ASALs), where pastoralism is the most important livelihood. Around 70% of the total area in the eight IGAD countries is constituted of ASALs, which receive less than 600 mm in annual rain-fall (IGAD Secretariat 2019b). These areas are dominated by nomadic and semi-nomadic pas-toralists and sedentary agro-pastoralists (Figure 2). In 2017, it was estimated that of the 252 million people living in the region, 52 million (20%) were pastoralists (UNECA 2017) (Table 3).⁵ The region is characterized by high population growth, and by 2030 the population is ex-pected to have increased to 338 million people (WBG 2020c).

Figure 2: Pastoralist livelihoods in IGAD countries.



Source: Cecchi et al. 2010.

Table 3: Number of pastoralists per IGAD country.

Country	Total pop (million)	Pastoralists (%)	Pastoralists (million)
Djibouti	0.9	45	0.4
Eritrea	5.2	13	0.7
Ethiopia	98.1	15	14.7
Kenya	44.3	10	4.4
Somalia	11.1	60	6.7
South Sudan	12.2	60	7.3
Sudan	40.9	20	8.2
Uganda	40.1	23	9.2
Total	252.8		51.6

Source: UNECA 2017

⁵It should be noted that there are significantly differing estimates, with some estimating a much lower total of 22 million people across the IGAD region.

Agriculture is the backbone of IGAD economies and the livestock sector contributes a significant share. With the exception of Djibouti, whose national economy depends on services, the economies of the countries in the IGAD region are based on agriculture, contributing major shares of gross domestic product (GDP). Over 80% of the population are rural and depend on smallholder agriculture as the main source of food and also as the engine of economic growth. Regionally, the agriculture sector contributes about one quarter of GDP and provides more than 60% of employment (WBG 2020c).

Livestock is a key contributor to the economies of member states, contributing, on average, 16% of GDP. The contribution of the livestock sector differs by country, contributing, for example, only about 3% of GDP in Djibouti but 40% in Somalia. The importance of the livestock sector relative to other agricultural activities is reflected in its share of agricultural GDP – in most of the IGAD countries it contributes more than one third of agricultural GDP and in Djibouti and Somalia more than 80% (Table 4). Indeed, livestock production tends to be significantly underrepresented in GDP estimates, as certain uses – such as using cattle for ploughing or transport and the production of organic fertilizer via manure – are not factored in (ICPALD 2013).

Table 4: Socio-economic indicators and contribution of the livestock sector to GDP in IGAD countries.

Country	GDP (USD billion) [2]	Agricultural contribution to GDP (%) [1]	Agricultural employment (%) [1]	Rural population (%)	Agricultural GDP growth rate (%) [1]	Livestock contribution to GDP (%) [3]	Livestock contribution to agricultural GDP (%) [3]
Djibouti	3.9	4	10	22	3.0	3.1	82.2
Eritrea [2]	2.1	14	57	n.a.	3.6	15–17	35–49
Ethiopia	96.1	43	83	79	7.1	16.5	35.6
Kenya	95.9	26	60	72	2.9	12	42
Somalia	0.9	40	71	54	2.6	40	88.2
South Sudan	12	15	87	80	3.6	21 (former Sudan)	60 (former Sudan)
Sudan	18.9	34	75	65	2.8		
Uganda	34.4	23	72	76	1.5	5.2	18
Average	--	26	65	64	3.4	16	53

Sources: [1] IGAD Secretariat (2016); [2] WBG Development Indicators; [3] Guthiga et al. 2017. All GDP figures are 2019 except Somalia (1990); Eritrea (2011) and South Sudan (2015).

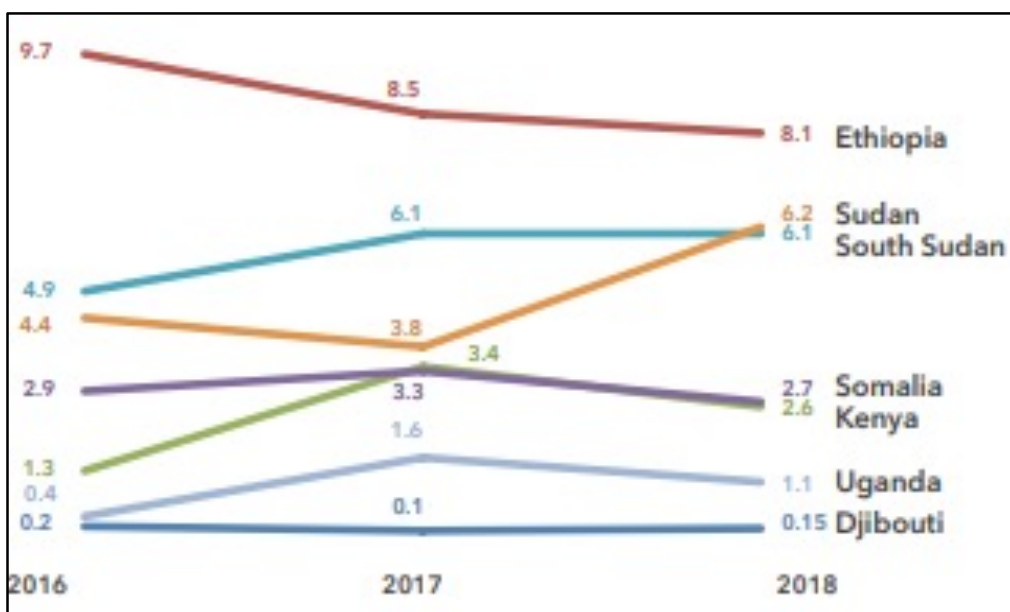
Pastoralism is also key for food security in the region. Pastoralism provides 90% of the meat consumed in East Africa and in Kenya (Malabo Montpellier Panel 2020). In Kenya, pastoralists account for 6–65% of total meat supply, which also includes imports from Ethiopia, Somalia, Tanzania, and Uganda (Farmer and Mbwika 2012). In Ethiopia, 80% of annual milk supply comes from pastoralist systems (Malabo Montpellier Panel 2020).

Pastoralists are among the poorest and most food-insecure population groups in IGAD countries. Pastoralists belong to the poorest parts of society. This is illustrated by many individual studies. For example, in Kenya, pastoralist communities score far lower than the country average across the board for all development indicators (Fitzgibbon 2012). Similarly, the Kara-moja region in Uganda's northeast, which is home to the country's pastoralists, is also its poorest region by far (Catley and Ayele 2018). In Somalia, in nomadic regions where most pastoralists reside a staggering 99% of people are classified as poor (UNDP 2012). In Ethiopia, a 2013 study of pastoralist livelihoods in one region found all surveyed households to be living below the international poverty line of two United States dollars (USD) per day (Tsegaye, Vedeld and Moe 2013). Given the high incidence of poverty among pastoralists, they are also the primary group in the Horn of Africa to be affected by food insecurity. There is a high and rising level of undernourishment in the region, amounting to 27% of the regional population and expected to grow to 34% by 2030 (FAO, IFAD, UNICEF, WFP and WHO 2020). Chronic food insecurity caused by unfavourable agro-climatic conditions and severe land degradation, transient food insecurity that occurs mostly as a result of recurrent severe droughts, and creeping food insecurity occurring throughout the region as a result of rapid population growth and general economic decline are the main forms of food insecurity occurring in the region (Box 1).

Box 1: Food security crises in the Horn of Africa since 2008

- Since 2009, countries in the IGAD region have been subject to repeated large-scale drought-induced shocks of food insecurity. These have affected all IGAD countries. Pastoralists have been particularly exposed.
- From 2008 to 2011, a series of large-scale droughts hit countries in the IGAD region, triggering a cycle of heightened food insecurity in the region that lasts until today. The 2011 drought was particularly severe, regarded by some as the worst drought in 60 years, and led to the need for major humanitarian interventions in Djibouti, Ethiopia, Kenya, Somalia and the Karamoja region of Uganda – over 10 million people there required urgent food assistance (UN OCHA 2011). Sudan was also significantly affected. With severe food and water shortages, children and adults were severely malnourished in parts of Somalia and in Ethiopia. Around 260,000 Somali died through starvation, half of them children (FSNAU and FAO 2013). Prices of food rose significantly, e.g. grain prices in Kenya were up to 80% higher than average. Appeals for emergency humanitarian assistance were severely underfunded, e.g. Somalia and Kenya funding requests for about USD 525 million in each country were only 50% committed and Djibouti's request for USD 30 million was only 30% funded (Funk 2020).
- Between 2015 and 2017, another series of severe droughts hit the region. The 2015 drought was induced by the El Niño weather phenomenon and was immediately followed in 2016 by a La Niña-type drought event. The consequences were devastating – by July 2017, the United States Agency for International Development (USAID) reported that close to 20 million people were facing acute food insecurity, including 6.2 million people in Somalia (of which 3.1 million faced crisis and/or emergency levels of food insecurity), 8.5 million people in Ethiopia, 3.4 million people in Kenya, plus an additional 875,000 Somali refugees in camps in neighbouring countries (USAID 2017; Funk 2020).
- Today, food insecurity in the region remains persistently high – in 2018, 27 million people in the IGAD region experienced acute hunger (state of 'crisis' as per the Integrated Food Security Phase Classification) and required humanitarian assistance (FSIN 2020; see Figure 3).

Figure 3: Peak numbers of people in IGAD countries in urgent need of food, nutrition and livelihood assistance (2016–2018).



Source: FSIN 2020.

Pastoralist areas in IGAD countries have long been neglected by policymakers and thus face a myriad of development challenges. Issues in pastoralist regions include, for example, lack of the most basic infrastructure such as water access, electricity and education; lack of market access including rural roads; lack of central service provision such as for livestock production and animal health; the degradation of land due to poor land management practices; lack of regional cooperation to prevent and manage shocks affecting livestock in the region such as livestock pests and diseases; and continued situations of conflict and insecurity. Moreover, other challenges include limited access to financial services, low public funding, and limited capacities of rural financial services. Gender inequality and limited youth participation are also challenges among pastoralists (Malabo Montpellier Panel 2020).

Pastoralists across the IGAD region have been impacted severely by the repercussions of COVID-19. As per interactions with in-country livestock experts, pastoralist livelihoods have been impacted in a number of ways, in particular the following: (i) restrictions on mobility and market closures leading to reduced access to livestock inputs such as vaccines and veterinary services – as per a Mercy Corps study of Somali Region in Ethiopia, livestock-keeping households lost 2–40% of their income between March and May 2020 as markets were closed (Mercy Corps 2020); (ii) border closures leading to restricted options for pastoralists to sell their animals to international markets; (iii) rising food prices; and (iv) reduced provision of agricultural extension services. In some cases, the impacts of COVID-19 have been exacerbated by compound shocks such as floods and locust invasions. The impacts on food security have been severe. More information is provided in the country annexes in Volume II to this report.

2.2 Livestock herds

National livestock herd sizes differ significantly across IGAD countries. Ethiopia has the largest national livestock herd in Africa (comprising camels, cattle, sheep and goats) with an estimated 128.6 million head of animals in 2018, or 30.3% of all livestock in the IGAD region. This is followed by Sudan (108.8 million animals, 25.6% of all livestock in IGAD region) and Kenya (69.1 million animals, 16.3% of total). Livestock herds are also large in the economies of South Sudan and Uganda. At the other extreme, Eritrea and especially Djibouti have small total numbers of livestock. Cattle are the most important class of animal in the IGAD countries with a total regional herd of 148.5 million or 35% of total animals, followed by goats and sheep (Figure 4 and Table 5).

Figure 4: Total livestock holdings by IGAD country (2018).

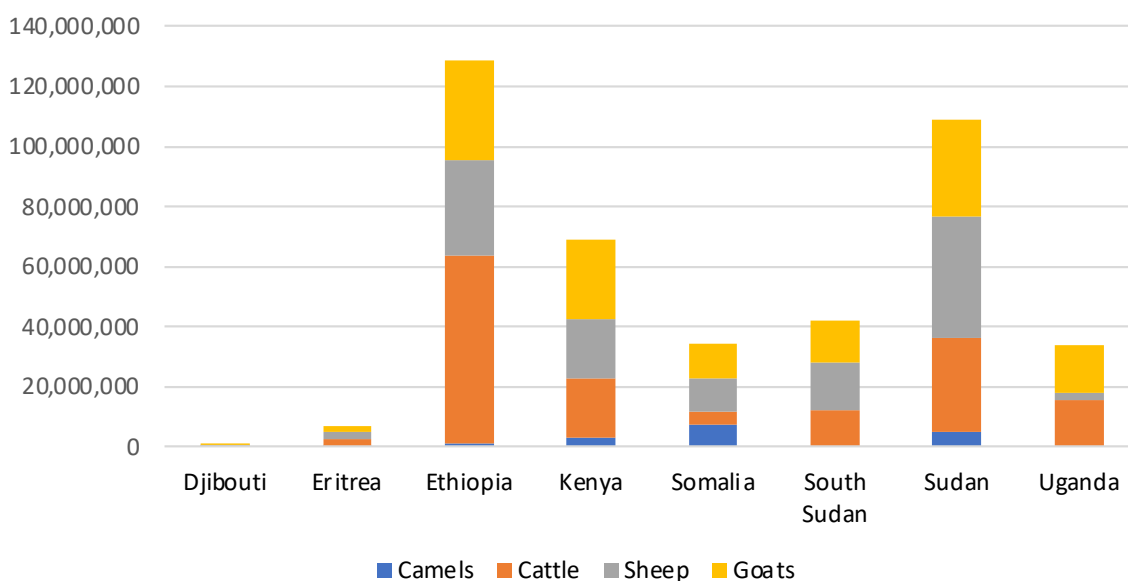


Table 5: Total livestock holdings by IGAD country (2018).

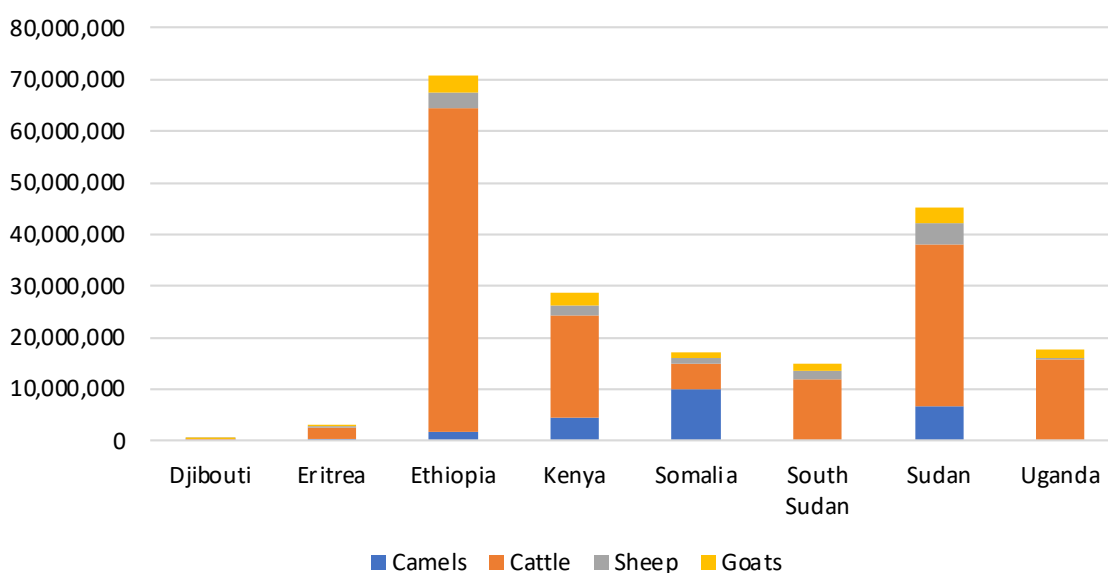
County	Camels	Cattle	Sheep	Goats	Total	% of total
Djibouti	70,978	300,870	469,095	514,664	1,355,607	0.3
Eritrea	378,140	2,129,963	2,432,034	1,812,963	6,753,100	1.6
Ethiopia	1,261,785	62,599,736	31,688,157	33,048,456	128,598,134	30.3
Kenya	3,273,445	19,635,142	19,485,699	26,710,775	69,105,061	16.3
Somalia	7,243,771	4,749,973	10,649,679	11,536,738	34,180,161	8.0
South Sudan		12,074,116	16,277,418	13,547,848	41,899,382	9.9
Sudan	4,872,000	31,223,000	40,846,000	31,837,000	108,778,000	25.6
Uganda		15,767,794	2,094,426	16,196,402	34,058,622	8.0
Total	17,100,119	148,480,594	123,942,508	135,204,846	424,728,067	100
% of total	4.0	35.0	29.2	31.8	100.0	

Data source: FAO 2020.

Assessing tropical livestock units (TLUs) 6 reveals the overwhelming importance of cattle in most countries and of camels in Somalia.

Herd structures are defined both in terms of numbers of animals and the nutritional feed requirements of different types of browsing animals. Figure 5 and Table 6 show TLU holdings in IGAD countries in 2018 amounting to a total of 198.3 million TLUs: Ethiopia was the largest country with 70.8 million TLUs (35.7% of total), followed by Sudan (45.3 million TLUs; 22.8% of total). The data show that cattle are most important for total livestock holdings in most countries, except for Somalia, where camels have a relatively greater importance (Somalia has the largest herd of camels in the world).

Figure 5: Total tropical livestock unit holdings by IGAD country (2018).



Data source: FAO 2020.

⁶Tropical livestock units (TLUs) allow comparison of the nutritional requirements across livestock species. Using ILRI's classification for the Horn of Africa, 1 adult cow weighing 250 kg is deemed to be equivalent to 1.0 TLU. In terms of nutritional requirements, a camel is equivalent to 1.4 TLUs and sheep and goats are equivalent to 0.1 TLU. It is noted that different institutions use different TLU conversion factors. For example, Houerou and Hoste (1977) use the following conversion factors for pastoral/nomadic herds: 1 cow = 1 TLU; cattle in a herd = 0.7 TLU; sheep = 0.1 TLU; goats = 0.08 TLU and camels = 1.25 TLU.

Table 6: Total tropical livestock unit holdings by IGAD country (2018).

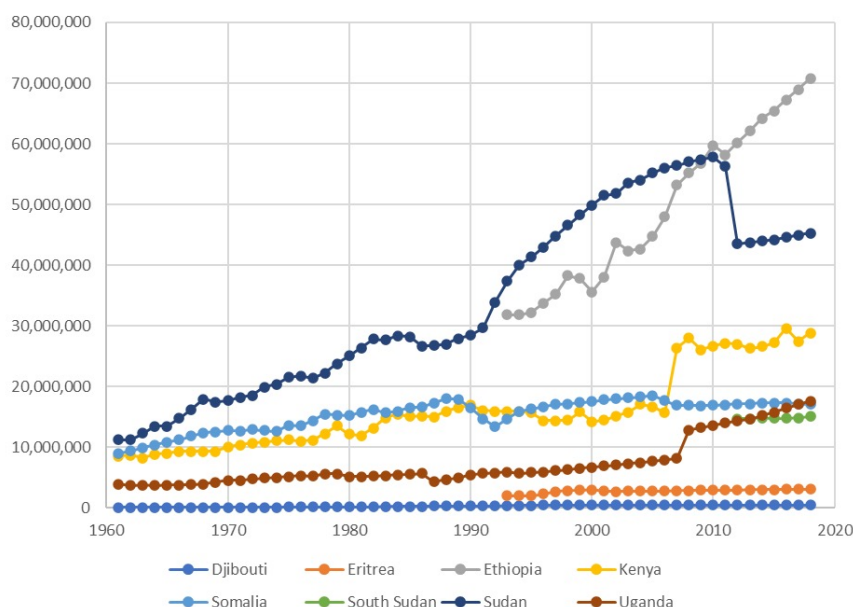
County	Camels	Cattle	Sheep	Goats	Total	% of total
Djibouti	99,369	300,870	46,910	51,466	498,615	0.3
Eritrea	529,396	2,129,963	243,203	181,296	3,083,859	1.6
Ethiopia	1,766,499	62,599,736	3,168,816	3,304,846	70,839,896	35.7
Kenya	4,582,823	19,635,142	1,948,570	2,671,078	28,837,612	14.5
Somalia	10,141,279	4,749,973	1,064,968	1,153,674	17,109,894	8.6
South Sudan	0	12,074,116	1,627,742	1,354,785	15,056,643	7.6
Sudan	6,820,800	31,223,000	4,084,600	3,183,700	45,312,100	22.8
Uganda	0	15,767,794	209,443	1,619,640	17,596,877	8.9
Total	23,940,167	148,480,594	12,394,251	13,520,485	198,335,496	100.0
% of total	12.1	74.9	6.2	6.8	100.0	

Data source: FAO 2020.

Livestock holdings in the IGAD region have shown strong growth over time. Figure 6 shows that over the last decades, national herds have grown persistently in IGAD countries. From the early 1990s until 2010, TLU holdings doubled in Ethiopia and Sudan, and over the last 20 years TLU numbers have tripled in Uganda. Further observations on the FAO data include the following.

- In 2011 South Sudan gained formal independence from Sudan and this explains the major reduction in TLUs in Sudan between 2011 and 2012.
- In both Kenya and Uganda, the total number of livestock was revised upwards by several million TLUs following the national livestock censuses conducted in 2008 and 2009.
- The livestock data do not appear to be sensitive to major climatic and disease-related mortality shocks. There also seem to be striking differences between the FAO data and national statistics. For example, for Somalia, the Government of Somalia (2019) holds that the livestock population in Somalia rose from 40 million animals in 1989 to 52.9 million animals in 2014 – much more than the FAO figures. These differences reflect the difficulties IGAD governments have in tracking the numbers of pastoralists, their livestock and animal mortality on an annual basis. At best, these figures are estimates.

Figure 6: Tropical livestock unit holdings in IGAD countries (1961–2018).



Data source: FAO 2020.

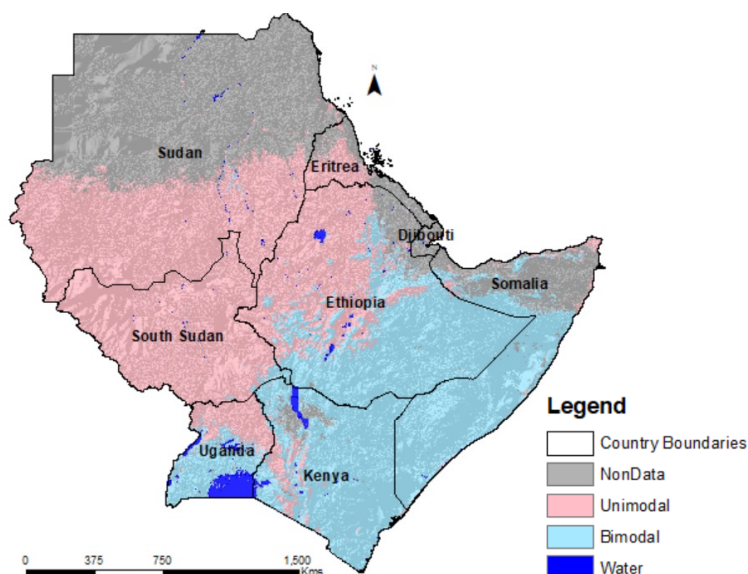
2.3 Livestock production systems and livelihoods

The ASALs in the IGAD region are home to pastoralists and agro-pastoralists. In pastoral systems, herders derive the main share of their income from livestock that feed on natural vegetation. Pastoralists are often nomadic and move with their herds in search of grazing lands. There are also sub-groups – e.g. semi-nomadic pastoralists who have a permanent place of residence but herders travel to distant grazing areas for extended periods of time (VSF International 2017). Meanwhile, agro-pastoralists are sedentary and derive part of their income from crop farming. Livestock tend not only to produce meat and milk but also enhance crop productivity by producing manure and providing animal traction for ploughing and transportation. There are no definite differentiation criteria – some highlight that agro-pastoralists tend to use enclosures for land rehabilitation, fodder production and land and livestock management (Nyberg et al. 2015). Others differentiate only by income share, stating that in agro-pastoral systems, livestock accounts for 5–80% of total income, while in pastoral systems, livestock account for more than 80% (Cecchi et al. 2010). A third production system that does not tend to be present in the ASALs are mixed crop-livestock systems, which are characterized by a smaller total income share of livestock production and the fact that crop and livestock are produced on the same land. They account for around 40% of all livestock farming in the IGAD region (Malabo Montpellier Panel 2020).

Some pastoralist areas in IGAD countries experience two rainy seasons separated by distinct dry seasons, while others only have one rainy season: these seasonal rainfall patterns determine the pastoralists' migratory lifestyle in search of grazing resources for their livestock. Two rainy seasons (bimodal) generally occur in Djibouti, Eritrea, most of Ethiopia, Kenya, Somalia and parts of South Sudan and Uganda. Conversely, generally only one rainy season (unimodal) occurs in parts of Ethiopia, most of South Sudan, Sudan, and the pastoralist Karamoja region of Uganda.

Figure 7 shows the distribution of seasonality across the region; while Figure 8 shows the typical seasonal calendar for a bimodal country such as Somalia. In areas with two wet seasons, pasture and grazing reserves are generally plentiful during the two seasons, and livestock herds are typically grazed in the tribal wet grazing lands surrounding semi-permanent settlements, often near regional towns. Meanwhile, during the dry seasons, where grazing resources are depleted, pastoralists migrate their cattle and camels to dry grazing lands, while small ruminants (sheep and goats) remain with the women and children and elderly in the semi-permanent settlements. Sharing natural resources and mobility are fundamental characteristics of pastoralist livelihoods.

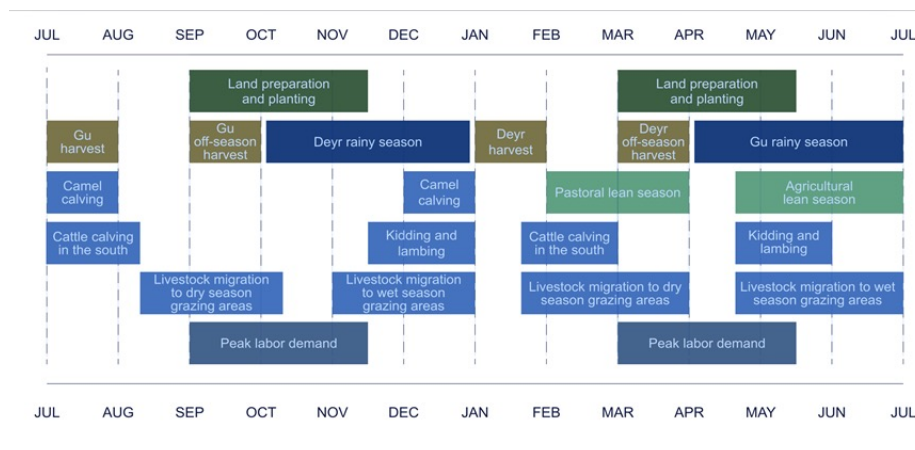
Figure 7: Distribution of unimodal and bimodal seasonality across the IGAD region.



Note: Authors' elaboration. Data obtained from the EU Joint Research Centre ASAP (Anomaly hot Spots of Agricultural Production).

<https://mars.jrc.ec.europa.eu/asap/download.php>

Figure 8: Seasonal calendar in Somalia with two wet seasons.



Source: FEWS NET 2013.

International livestock exports are a key source of revenue for pastoralists everywhere in the IGAD region. This is well illustrated in Somalia, where the livestock sector is dominated by pastoralist production systems. There, the livestock sector depends heavily on exports, having risen by almost a factor of 10 over the last 30 years. In 2015, 5.3 million livestock were exported, a 33% increase from 4 million in 2011. The majority of export markets are in the Gulf region, with Saudi Arabia accounting for 65% of 2015 exports, followed by neighbouring countries such as Yemen and Oman (FAO and WBG 2018). Besides livestock, exports of related products such as milk, fish, hides and skins have become more important (World Bank 2018). Similarly, international livestock trade plays important roles in all other IGAD countries except for Eritrea. More information is provided for each country in the country annexes in Volume II to this report.

Changing conditions are increasing the pressure on pastoralist livelihoods. Pastoralists are becoming more vulnerable to shocks. Environmental degradation and desertification, climate change, population growth, increased competition for natural resources such as grazing lands and water, invasion of rangelands by species of limited palatability for livestock (e.g. *Prosopis juliflora*, *Solanum mauritianum* Scop.) (Witt, Beale and van Wilgen 2018) and constrained mobility (due to new settlements, large development schemes and border controls) all impact the resilience of pastoralist communities and increase the likelihood of conflict and food insecurity (Fre and Tesfagergis 2019). National and regional food security is often misrepresented and such contribution to food security is regularly unappreciated by policy makers at State level. Such an attitude is reflected in national and regional government policy perspectives which often do not apportion adequate financial and human resources to help the sector develop to its fullest potential. The paper argues that pastoralism and agro-pastoralism (i.e. as an environmentally/socially sustainable livelihood system). Recurrent large-scale droughts (see Box 1) have had a particularly negative impact on the overall resilience of pastoralists in the region (WBG 2014).

Due to the above-described pressures on traditional pastoralism, agro-pastoralism is growing in importance across the region. Figures on the split between pastoralists and agro-pastoralists in IGAD countries are scarce. In Somalia, about half of the country's pastoralists are nomadic, while the other half have settled down as agro-pastoralists (FAO and WBG 2018). However, there is evidence showing the tendency of many nomadic pastoralists across the Horn of Africa to adopt more sedentary lifestyles as a response to demographic pressures and the need to intensify the use of limited land and water resources (e.g. from Kenya, Nyberg et al. 2015; from Sudan, Fre and Tesfagergis 2019). National and regional food security is often misrepresented and such contribution to food security is regularly unappreciated by policy makers at State level. Such an attitude is reflected in national and regional government policy perspectives which often do not apportion adequate financial and human resources to help the sector develop to its fullest potential. The paper argues that pastoralism and agro-pastoralism (i.e. as an environmentally/socially sustainable livelihood system; and from Uganda, Nakalembe, Dempewolf and Justice 2017

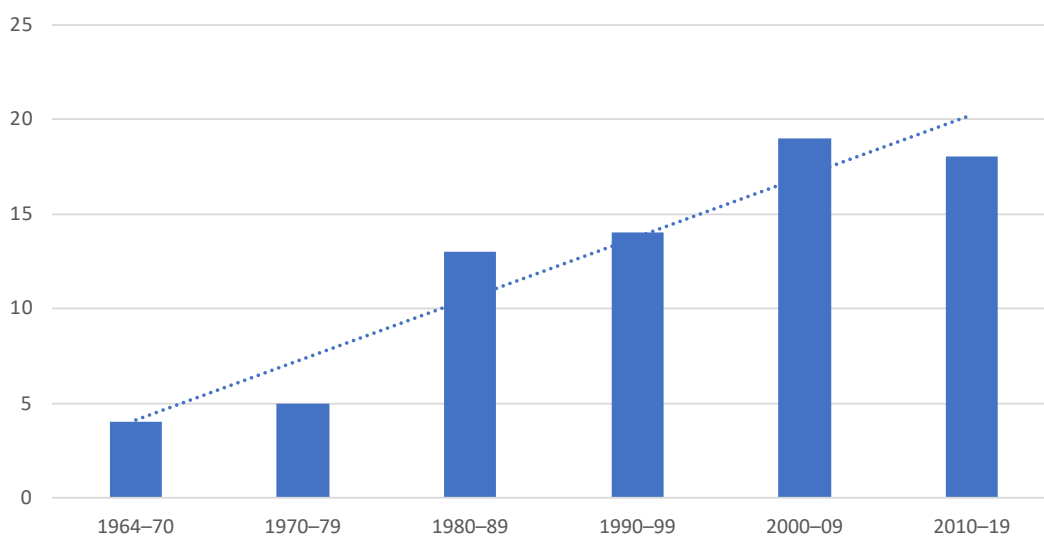
Uganda by investigating the links between biophysical and political historical events leading to the current state of agricultural land use. Our objective was to quantify agricultural expansion, uncover the dominant drivers leading to the current state of agricultural land use and its impacts on livelihoods. Region wide analysis of remotely sensed data, land use policy and history as well as farmer interviews were undertaken. We posit that government programs instituting sedentary agriculture are the most significant drivers of cropland expansion in Karamoja. We show a 299% increase in cropland area between 2000 and 2011 with most expansion occurring in Moroto District (from 706 ha to 23,328 ha). In settling down, pastoralists are leveraging new technological opportunities and diversify their livelihoods, for example through commercial farming, increased marketing of livestock, dairy products and hides, small shops, wage labour and petty commodity trade. This trend has also been supported actively by governments, at the expense of rangelands used by pastoralist and thus of pastoralist livelihoods. For example, the Ugandan Government has promoted policies of cropland expansion since the 1960s. Thus, the Nyabushozi area in southwestern Uganda was transformed from pastoralist to agro-pastoralist systems between the 1960s and the 1990s, which created more processing and value addition of dairy products in the area. Today, it has the greatest concentration of milk processing plants per capita in Uganda (Petersen et al. 2004; Malabo Montpellier Panel 2020). Similarly, in the Karamoja region in northeastern Uganda, a traditional pastoralist area, the extent of crop lands is growing with government support and has tripled from 2000 to 2011 (Nakalembe, Dempewolf and Justice 2017)

2.4 Impacts of droughts in the IGAD region

2.4.1 Economic impacts

The IGAD region is prone to recurrent droughts and dry spells. Between 1964 and 2019 droughts have been recorded in one or more of the IGAD countries in 37 years or 66% of the 56 years, with all countries affected in the 2008/09 droughts.⁷ As per data from the EM-DAT database, the frequency of droughts in IGAD countries appears to be increasing, particularly since the 1990s (Figure 9). Kenya has the highest number of reported drought events (16 droughts or one every 3.5 years), followed by Ethiopia (15 droughts, or one every 3.7 years) (Figure 10).

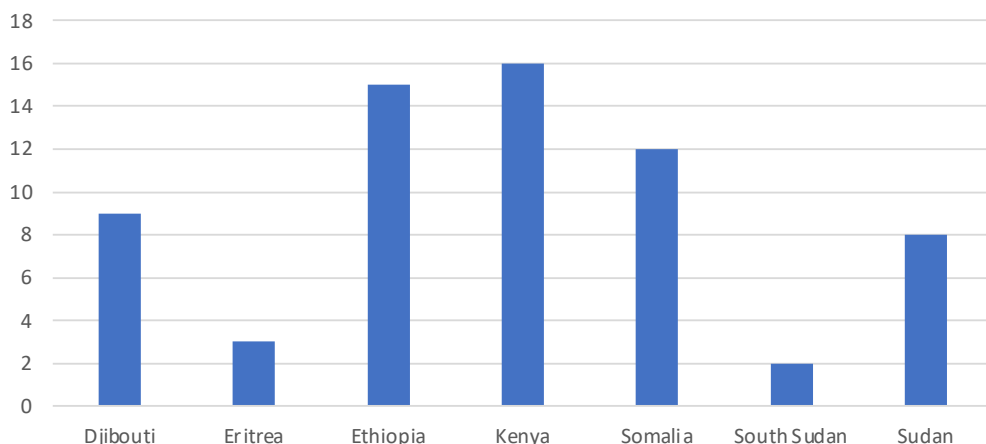
Figure 9: Number of IGAD countries reporting drought by decade (1964–2019).



Data source: EM-DAT 2020.

⁷The EM-DAT data are based on disaster events reported by host countries and are known to under-represent actual drought events, particularly in earlier years. Also the accuracy of the number of drought-affected by drought is sometimes questionable.

Figure 10: Number of reported droughts by IGAD country (1964–2019).

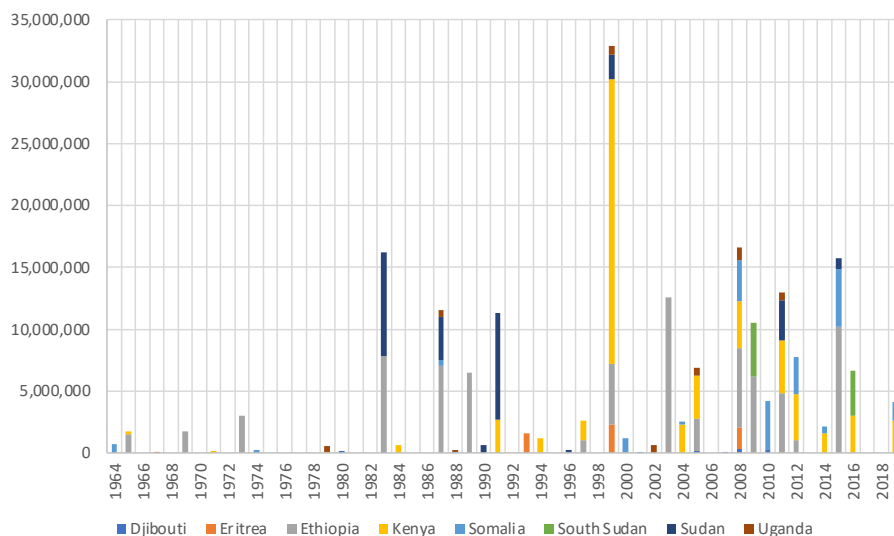


Data source: EM-DAT 2020.

The incidence of floods and droughts in the Horn of Africa is highly influenced by the El Niño and La Niña phenomena, which occur every three to five years. During the El Niño (warmer-than-normal sea-surface temperatures in the Pacific) phase, the IGAD region typically experiences above average rainfall and localized flash flooding and land-slides, while the La Niña (cooler than normal sea-surface temperatures) phase, which typically follows an El Niño, is often associated with extreme drought conditions across much of the Horn of Africa. Since 1950, there have been 23 El Niño and 14 La Niña events. Among the 14 La Niña events, nine came immediately after an El Niño year. Over the past 40 years, the major El Niño events have been in: 1982–83, 1986–87, 1991–92, 1994–95, 1997–98, 2002, 2006, 2009–10, 2015–16. Major La Niña events occurred in 1983, 1984–85, 1988–89, 1995, 1998–99, 1999–2000, 2007–08, 2001–11, 2016–17.

Major droughts tend to affect millions of people in the region. A summary of the impacts of droughts in terms of the number of drought-affected people for the eight IGAD countries between 1964 and 2019 is presented in Figure 11, as per EM-DAT data. The figures show that more than 10 million people were affected by drought in the region on nine occasions and that many of the most severe drought years also coincided with La Niña years (1983, 1999, 2008, 2011). One must note the limitations of the data, however. For example, one anomaly in this data series appears to be the 2016/17 La Niña drought, where the EM-DAT figures show only 6.6 million affected people in two countries, Kenya and Sudan. In fact, close to 20 million people experienced acute drought-related food insecurity in the Horn of Africa region in 2016/17, including in Ethiopia, Kenya and Somalia.

Figure 11: Number of people affected by drought by IGAD country (1964–2019).



Data source: EM-DAT 2020.

Despite scarce data, available models show the large losses that IGAD economies regularly suffer due to droughts. Data on the cost of drought across IGAD countries is scarce. For Ethiopia, Kenya and Uganda, probabilistic drought risk assessments have been conducted recently but three of them exclude the impact of drought on livestock holders and are thus likely to significantly underestimate the economic cost of droughts. There are other estimates of the cost of droughts, some of which significantly differ, but all indicate the significant economic impact of droughts (Table 7).

Table 7: Modelled impacts of drought on selected IGAD economies.

Country	People impacted		Average annual loss		1:50 loss		Source
	(annual average, million)	(annual average, % population)	(USD million) [2]	(% GDP) [2]	(USD million) [3]	(% GDP) [3]	
Ethiopia			1,100	3.4			Oxfam and Save the Children 2012)
Ethiopia [1]	1.5	1.5	40	0.06	250	0.4	WBG 2019a
Kenya [1]	5.5	11.5	150	0.23	4,000	6.2	WBG 2019b
Kenya	5.5	13.0	70	0.11	900	1.4	UNDRR 2019
Uganda [1]	4.5	11.8	20	0.06	150	0.5	WBG 2019c

[1] Does not include drought impacts on livestock.

[2] Annual average loss as a percentage of GDP calculated from World Bank World Development Indicators data (2015).

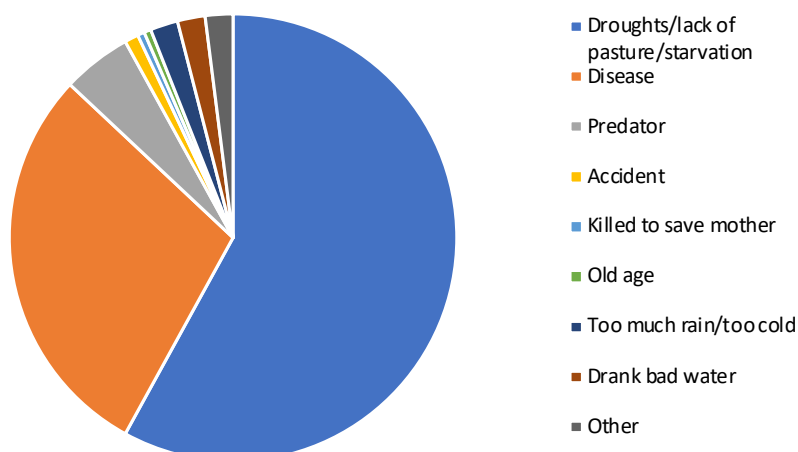
[3] Greatest modelled loss occurring on average once every 50 years; % GDP calculated from WB World Development Indicators data (2015).

Sources: As indicated.

Assessments for Ethiopia, Kenya and Somalia show the severe impact of droughts on the respective livestock sectors. The data on drought impacts specifically on livestock sectors is even scarcer than for other sectors groups in the IGAD region but there are individual drought assessments that quantify losses and damages. For example, in the pastoralist Borena region in southern Ethiopia, where almost 1 million animals died, including 60% of the local cattle population, the total cost of the 2011 drought has been estimated at USD 384 million (Shitarek 2012). For Kenya, the WBG post-disaster needs assessment found that the 2009–2012 droughts cost the national economy USD 12.1 billion, over 70% of which was borne by the livestock sector. Approximately 9% of the national livestock herd died then due to drought (WBG 2012). In Somalia in 2017, pastoralists lost 25–75% of their herds (depending on the impacted areas) and total drought-related losses and damages were estimated at up to USD 3.25 billion, about 50% of GDP, of which the livestock sector suffered USD 1.6 billion (Government of Somalia 2018).

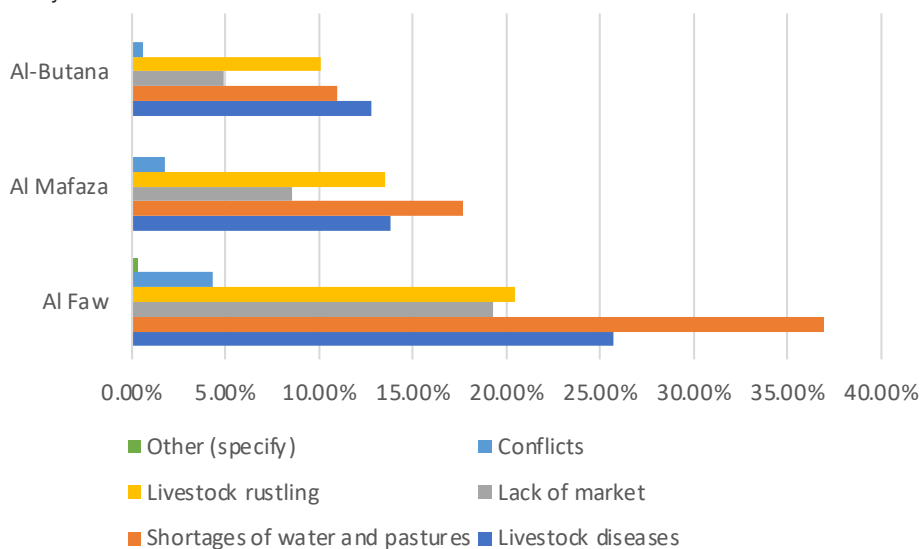
Pastoralists tend to be disproportionately impacted, with drought leading to dried-up pastures and, ultimately, livestock starvation. The particular challenge that drought poses to pastoralist livelihoods has been evidenced in various studies on pastoralist areas. For example, a 2001 study for Marsabit District, a primarily pastoralist area in Kenya, showed that drought-associated starvation was by far the most important reason for livestock death – much before natural or any other causes (Figure 12). A study from Gedaref State, an agro-pastoral area in eastern Sudan, showed that drought was the key challenge for households in the region (Figure 13). And studies on the Afar, Borena and Somali pastoralist regions in Ethiopia have shown that after the 2005–06 droughts, 54%, 48% and 37% of the local livestock herds died, respectively – the key cause was starvation (Table 8). The other cause always highlighted in studies on causes on livestock mortality is animal disease – a factor closely linked to the occurrence of drought as animals become less resilient to disease when weakened by lack of feed.

Figure 12: Causes of mortality for livestock in Marsabit District, Kenya based on number of respondents citing causes of livestock death (2000–2002).



Source: Mude et al. (2010) citing McPeak and Barrett (2001).

Figure 13: Nature of problems facing livelihood of communities in Gedaref state, Sudan by number of respondents per sub-locality.



Source: Hussein 2020.

Table 8: Reasons for herd loss and percentage lost in three pastoralist areas in Ethiopia.

Reasons for offtake or loss from herd	Afar herds (% of herd lost)		Borena herds (% of herd lost)		Somali herds (% of herd lost)	
	Normal year	Drought year	Normal year	Drought year	Normal year	Drought year
Starvation	0.0	19.5	0.7	13.1	0.0	15.5
Disease	10.1	16.7	12.5	11.9	12.6	7.3
Sales	6.0	6.5	8.4	8.5	7.0	5.1
Slaughter	0.6	0.4	1.7	1.8	4.1	3.1
Predation	4.7	5.1	6.8	6.1	6.1	4.6
Other	6.1	5.3	7.0	6.2	2.9	1.2
Total	27.5	53.5	37.1	47.6	32.7	36.8

Source: Bekele and Abera 2008⁸.

⁸Based on unpublished field data collected by Dr. Gezu Belkele, Dr. Tesfaye Rufael, Dr. Tesfaye Haile, Dr. Bayou Abera and Dr. Gezahegn Eshete in 2006 for the Livestock Policy Forum, Ministry of Agriculture and Rural Development, Ethiopia.

The low levels of resilience of pastoralist areas regularly lead to them being those most impacted by even moderate drought and, subsequently, food insecurity. The prevalence of food insecurity in pastoralist areas as a result of droughts is persistently high. Pastoralist areas often become food insecure even after lower-severity droughts – resilience has often been eroded by years of marginalization and political neglect (Grünwald, Léon and Levine 2019).

Given the severe impact that droughts tend to have on pastoralist and agro-pastoralist communities, they employ different traditional coping strategies to mitigate the effects. Traditional coping mechanisms include, for example, the following:

- **Migrating livestock to better grazing lands**, the traditional pastoralist response practiced across the Horn of Africa.
- **Diversifying livestock herds.** Cattle and sheep are much more susceptible to drought stress and mortality than camels and goats.⁹ Added benefits include that different animal species are affected differently by disease, have different returns on capital, produce different food in different seasons, and reproduce at a different pace. Thus, pastoralists diversify their herds as a strategy to hedge against risk (WBG 2014). There is evidence in pastoralist zones of Ethiopia, including Oromia region and Borena zone, that in response to the severe recurring droughts since the turn of the century there has been a shift away from cattle production to ownership of more drought-resistant camels and goats (Pantuliano and Wekesa 2008).
- **Local community support mechanisms.** A feature of pastoral societies in the IGAD region is the mutual or self-help given by clans to members who lose their animals due to drought or diseases or other causes. For example, in the Borena region of Ethiopia the traditional clan-based social security system called *Buusa goonfa* involves the voluntary giving of livestock and other redistribution resources by wealthier clan members to poorer members who have lost livestock due to drought or other misfortune (Mengistu 1998). This traditional practice is very similar to a system of mutual livestock insurance although it does not involve the payment of premiums by pastoralists.
- **Destocking.** Some pastoralists also resort to selling off their animals as a risk management tool. This can be a successful strategy, particularly during the early phases of a severe drought when terms of trade are still favourable. However, the existence of live animal offtake markets and pastoralists' access to them are often a challenge. Many pastoralists are also very reluctant to sell their animals, being their most important assets. During later stages of a drought, they might be forced to sell nonetheless via drought distress sales.
- **Other coping strategies.** These include a lower intake of food, eating wild foods, being supported by relatives, use of veterinary services, borrowing, and use of livestock insurance.

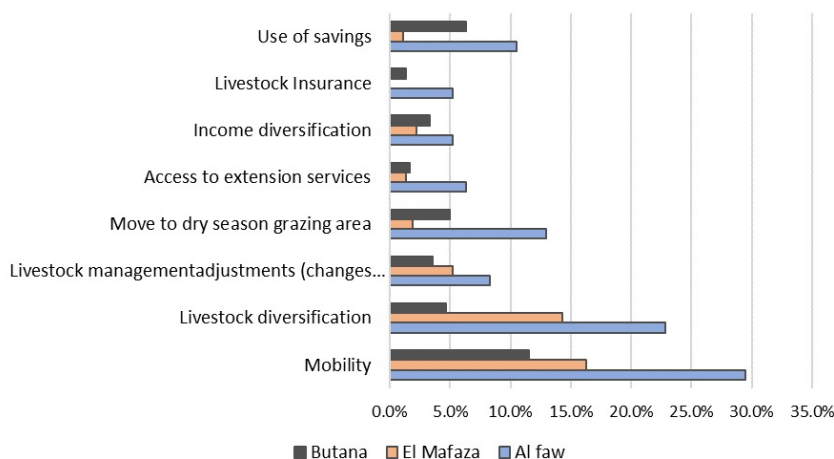
Exemplary drought-coping measures taken by agro-pastoralist communities in eastern Sudan are described in Box 2.

Box 2: Coping with drought – the case of agro-pastoralists in Gedaref State in Eastern Sudan

- A recent survey explored coping strategies of communities in Gedaref State in Eastern Sudan, bordering Ethiopia. These communities are largely agro-pastoralist based but in all of the three surveyed areas there were significant livestock holdings (at least 43% of households kept livestock in Al Faw, 25% in Butana and 23% in El Mafaza). Respondents cited drought and livestock diseases as the key challenges to local households, with 63% of households in Al Faw citing water shortages or livestock disease as their most pressing problems, 24% in Butana, and 32% in Al Mafaza.
- Key cited household coping strategies included, particularly, the migration of livestock herds (mobility) and herd diversification, as shown in Figure 14.

⁹Cattle and sheep are grazing animals and rely on grassland and pasture for their nutrition; conversely goats and camels are browsers which can survive on bush and tree leaves. In severe droughts, pasture and grazing are the first forage resources to be exhausted and cattle and sheep quickly become malnourished and prone to diseases, eventually starving to death. However, goats and camels can continue to survive by eating bush and tree leaves. In addition, cattle and sheep require more regular watering than goats and, especially, camels.

Figure 14: Coping strategies of households in Gedaref State, Sudan by sub-locality.

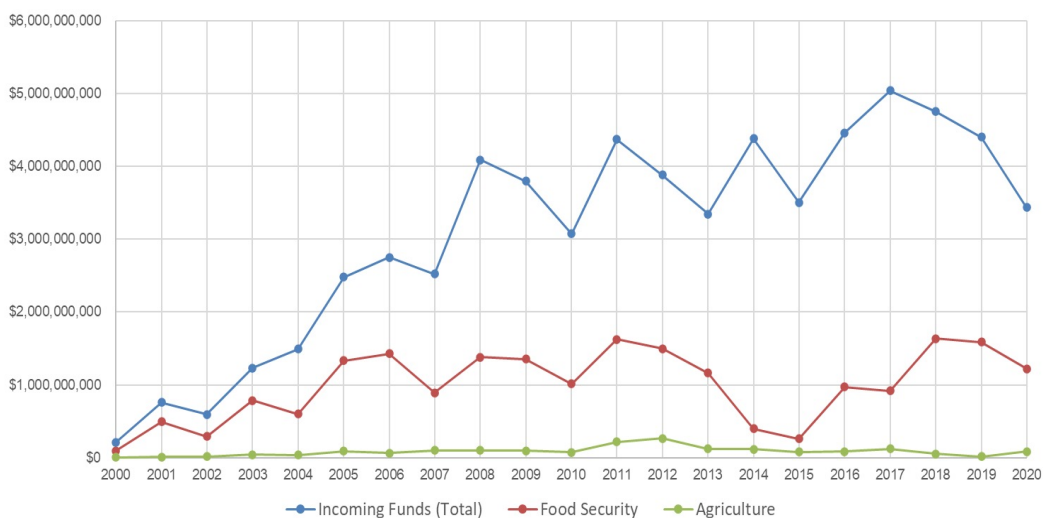


Source: Hussein 2020.

2.4.2 International humanitarian assistance to IGAD countries

In response to droughts, large amounts of international humanitarian assistance are frequently drawn in to respond to drought emergencies in the region. Figure 15 shows that over the 20-year period 2000 to 2020, the eight IGAD countries received a total of USD 64.6 billion in international assistance, of which USD 20.9 billion (32.4%) was allocated to food security and USD 1.8 billion (2.8%) to agriculture. This equates to an average annual total international aid flow of USD 3.1 billion of which USD 997 million was expended on food security and USD 85 million on agriculture. The peak years of expenditure on food security were 2005–06, 2011–12 and 2018–19 and on agriculture between 2010 and 2012. Notably, these were severe drought years in much of the Horn of Africa.

Figure 15: Incoming international aid funding for the IGAD region tracked by UN OCHA (2000–2020).



Data Source: UN OCHA 2020.

Sudan, Somalia, Ethiopia and South Sudan have received most of the international humanitarian assistance provided. Over the past 20 years, Sudan has been the highest recipient of incoming aid, valued at USD 18.2 billion (28.1% of total funds flowing to the IGAD region), followed closely by Somalia, Ethiopia and South Sudan, all receiving slightly more than USD 12 billion in aid. Ethiopia was the country with the highest allocation of funds to food security, or 33.8% of total funds, followed by Sudan and Somalia (Table 9). Except for South Sudan, which has faced years of internal conflict, Sudan, Somalia and Ethiopia are the three countries most impacted by drought in the region (excluding Kenya which arguably has greater resources for drought response at its own disposal).

Table 9: Incoming international aid funding by country and percentage allocation to food security and agriculture (2000–2020).

Country	Incoming funds (total USD billion)	Incoming funds (%)	Food security (%)	Agriculture (%)
Djibouti	0.3	0.5	0.6	1.2
Eritrea	0.7	1.1	1.6	1.7
Ethiopia	12.3	19.0	33.8	10.1
Kenya	5.1	7.9	11.4	4.7
Somalia	12.3	19.0	15.9	36.7
South Sudan	12.2	18.8	10.2	20.8
Sudan	18.2	28.1	20.2	20.2
Uganda	3.5	5.4	6.3	4.8
Total	64.6	100	100	100

Data source: UN OCHA financial tracking service 2020.

The vast majority of the humanitarian assistance provided is in the form of ad-hoc emergency assistance rather than through pre-positioned financing solutions – this tends to be slow and inefficient and there is significant room for improvement. In the context of this feasibility study, there may be considerable potential to reallocate some of the international aid funding that is expended on food security (average of USD 1 billion per year) and expenditure on emergency assistance to the agricultural sector (average of USD 85 million per year) to the ex-ante financing of sovereign risk drought index insurance covers for vulnerable farmers and pastoralists in the IGAD region. Such pre-positioned disaster risk financing solutions have the potential of providing resources to beneficiaries faster, more cost effectively and more reliably.

3. Livestock development initiatives in the IGAD region

This section reviews ongoing initiatives in the IGAD region for livestock development and resilience support among pastoral communities, and maps out key players. In doing so, it aims on the one hand to show the significant investments made by governments, donors and development partners in the last decade to address key challenges faced by pastoral systems; on the other hand, it provides a broad overview of the policy context with which any regional initiative for IBLI implementation should be integrated and harmonized.

3.1 IGAD policy initiatives for drought resilience for pastoralists

The devastating drought in 2010/2011 provided the impetus for the Nairobi summit that mandated a new major regional initiative tackling drought disasters. In September 2011, IGAD and East African Community heads of state and governments convened in Nairobi to decide on a new regional initiative to 'end drought emergencies'. The Nairobi summit called on all IGAD countries and development partners to find new ways of working together holistically and to combine relief and development interventions in order to build resilience.

The IGAD Secretariat was tasked with leading and coordinating the implementation of the summit decision. For this, IGAD relies on different key mechanisms and institutions:

- **The IGAD Drought Disaster Resilience and Sustainability Initiative (IDDRSI).** This is the key tool for IGAD to deliver on the Nairobi summit. IDDRSI is essentially a coordination body for all projects and programs in the region supporting the building of greater drought resilience. It is governed by a separate General Assembly with broad membership of IGAD member states' ministries, regional institutions, development partners, civil society, the private sector, research centres and farmers' associations. All main projects and programs dealing with drought resilience in the region are supposed to align with IDDRSI strategy documents.¹⁰
- **The IGAD Centre for Pastoral Areas and Livestock Development (ICPALD).** ICPALD was established in 2011, independently of the Nairobi summit. It became fully functional with the signing of the ICPALD protocol in 2013. ICPALD is the IGAD regional institution to promote regional livestock development. For this, ICPALD largely pursues different research activities and acts as policy and implementation partner for development partners and non-governmental organizations.
- **The IGAD Climate Prediction and Application Centre.** This is IGAD's provider of climate services to its member states. The centre acts as a central data hub and analytics institution for the region, which provides different analytical products to member states. For example, part of its product portfolio are weather forecasts, a crop monitor and food security analyses that can be accessed on its website (<https://www.icpac.net/>).

¹⁰Key IDDRSI strategic pillars and considerations are laid out in the IDDRSI regional programming paper 2019–2025 (IGAD Secretariat 2019d). Each IGAD member state has likewise adopted a country programming paper to align with the regional programming paper that can be accessed on the IDDRSI website (<https://resilience.igad.int/resources/page/1>).

Through its strategic plans both at regional level and for each of the IGAD countries, IDDRSI pursues eight priority intervention areas: (i) natural resource and environmental management: enhancing drought-prone communities' access to and use of sustainably managed natural resources and environmental services; (ii) market access, trade and financial services: improving transport, market infrastructure, and financial services in the ASALs; (iii) enhanced production and livelihood diversification: increasing the adaptive capacities of the drought-prone ASAL communities; (iv) disaster risk management: enhancing drought disaster management in the IGAD member states; (v) research, knowledge management and technology transfer: improving the utilization of knowledge for drought resilience in member states; (vi) peace building, conflict prevention and resolution: achieving peace and stability in the IGAD region; (vii) institutional strengthening, coordination and partnerships: strengthening the institutional capacity, coordination structures and partnerships for effective implementation of IDDRSI; and (viii) human capital, gender and social development: increasing equitable access to basic social services in drought-prone areas (IGAD Secretariat 2020c).

Other IGAD regional policy frameworks relevant for pastoralists include the following:

- The **African Union Policy Framework for Pastoralism in Africa** recognizes the role of pastoralism in development, especially its economic, social and cultural contributions. It supports the ability of pastoralists to move freely within countries and across borders (African Union 2010).
- The **Common Market for Eastern and Southern Africa (COMESA) Policy Framework for Food Security in Pastoralist Areas** likewise supports pastoral mobility including cross-border migrations, supports pastoral land tenure, advocates for support to be provided to pastoralists to participate in intra-regional trade (e.g. through regional approaches to controlling transboundary animal diseases) and recommends further studies to be undertaken to better understand the economic contributions and national, as well as regional, potential of pastoralism.
- The **IGAD framework for livestock development and livelihoods** advocates for better regional coordination of governments in order to facilitate inclusive growth for pastoralists and livestock sectors. It also recognizes the need for improving livestock productivity and pastoralist access to markets (Waiswa et al. 2019).

Livestock insurance has been identified as a regional policy priority for building drought resilience but progress has been limited so far. At the regional level, different activities have been conducted to work on livestock insurance:

- For **IDDRSI Priority Intervention Area 2**, the IDDRSI Regional Programming Paper 2019–2025 lists a series of intended strategic interventions on livestock insurance, including, e.g. a feasibility study on delivery mechanisms, awareness creation among target participants, design and implementation of an insurance program, and monitoring and evaluation of the program (IGAD Secretariat 2019d). However, none of these activities has been implemented so far.
- The IGAD Secretariat has organized **two regional conferences on risk transfer** for resilience building. This includes the September 2016 Kampala 'Regional Conference on Risk Transfer and Micro Insurance for Resilience Building in the IGAD region' and the May 2017 Khartoum 'Second Regional Conference on Risk Transfer and Micro-Insurance for Resilience Building in the IGAD region' In June, IGAD also participated in the 2019 Addis Ababa 'Policy Roundtable and Technical Workshop on Index-Insurance for Livestock in the IGAD Region', together with ILRI, the Technical Centre for Agricultural and Rural Cooperation, WBG and FAO. Key outcomes from these events include that IGAD country governments (i) confirmed their policy support to pastoralists through livestock insurance; (ii) expressed their interest to work with private sector insurers in developing a regional approach to livestock insurance, as this would promote peace building, ensure sustainability, and use economies of scale; (iii) acknowledged the need to tailor any regional insurance approach to the specific needs of each participating country; and (iv) recognized that insurance needs to be delivered as part of a package that also supports other elements of pastoralist drought resilience (IGAD Secretariat 2017, 2019c; Wangalachi et al. 2020).
- In September 2020, **ICPALD and ARC** hosted a workshop with the aim of introducing the ARC sovereign drought insurance mechanism to government officials and policymakers in the region and set the basis for follow-up actions for in-depth discussions with individual countries (ARC 2020). ICPALD and ARC are also exploring the possibility of signing a memorandum of understanding.

So far, IBLI solutions are only being implemented in Kenya and Ethiopia but other IGAD countries have expressed their strong interest. The Kenyan and Ethiopian IBLI programs are further discussed in Section 4. During the latest regional IGAD conference on risk transfer in Addis Ababa in 2019, all governments in the region voiced their strong interest in pursuing IBLI-based solutions (Wangalachi et al. 2020). In late 2019, the governments of Djibouti, Eritrea, Ethiopia, Kenya and Somalia also issued a communiqué on the intended ‘Horn of Africa Initiative’, a major (USD 15 billion) investment program that also included a component on drought index insurance to protect pastoralists and their livestock (Governments of Djibouti, Eritrea, Ethiopia, Kenya and Somalia 2019). Furthermore, the Government of Uganda recently confirmed its interest in implementing such a cover under the IGAD regional livestock initiative as a macro-level livelihoods protection cover for pastoralists in the livestock corridor of Uganda, including for the Karamoja region. The Government of Sudan has also expressed interest in IBLI solutions and Syngenta Foundation for Sustainable Agriculture and ILRI have planned an IBLI feasibility assessment study in Sudan in 2021: funding support is being provided by the Swiss Capacity Building Facility and AgFund. Responding to requests from governments, WBG also recently conducted IBLI pre-feasibility studies in Somalia (WBG and ILRI 2019) and in Djibouti (WBG 2020b).

3.2 Key institutions involved in livestock and pastoral development

For each of the IGAD countries, Table 10 provides an indicative list of public and private stakeholders working on pastoral development or with pastoral communities. Naturally, these lists are not comprehensive but can provide an overview of key actors working on this agenda in each country. Further details can be accessed for each IGAD country in Volume II of this report.

Table 10: Selection of key national stakeholders in IGAD countries working on pastoral development.

Djibouti	
Ministries	<ul style="list-style-type: none"> • Directorate of Livestock, Ministry of Agriculture (at IBLI conferences) • Ministry of Interior (at IBLI conferences)
Livestock sector associations	<ul style="list-style-type: none"> • Djibouti Agro-Pastoralist Association
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: no information (seven banks and four Islamic banks with very few branches in inner country) • Mobile cash: mDJF • Insurers: no information (two insurers in-country not interested in IBLI) • Other: La Poste de Djibouti (for cash transfers)
Development partners	<ul style="list-style-type: none"> • IFAD, FAO, WBG, WFP
Eritrea	
Ministries	<ul style="list-style-type: none"> • Ministry of Agriculture (at IBLI conferences)
Livestock sector associations	<ul style="list-style-type: none"> • No information
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: Saving and Micro-Credit Programme
Development partners	<ul style="list-style-type: none"> • IFAD, AfDB, FAO, WFP, EU (with in-country office)
Ethiopia	
Ministries	<ul style="list-style-type: none"> • Ministry of Agriculture/Agricultural Transformation Agency (at IBLI conferences) • Livestock and Fishery Marketing Department within the Ministry of Agriculture • Ministry of Peace (at IBLI conferences) • National Meteorological Agency (at IBLI conferences) • Pastoral/agro-pastoral bureaus • Cooperative offices

Ethiopia	
Livestock sector associations	<ul style="list-style-type: none"> • Ethiopian Meat and Dairy Industry Development Institute • Ethiopian Meat Producer Exporters Association • Ethiopian Animal Feed Industry Association • National Export Council
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: Somali MFI, Afar MFI, Omo MFI, Rays MFI • Mobile cash: HelloCash (Belcash); Sendwave; M-Birr (Ambassa/Lion Bank & Hibret/United Bank); CBE Birr (Commercial Bank of Ethiopia); Sahay Mobile Banking (Rays MFI) • Insurers: Oromia Insurance Company (underwriting IBLI); Nyala, Ethiopian Insurance Corporation, Africa Insurance, Oromia Insurance Company (all underwriting SIPE)
NGOs	<ul style="list-style-type: none"> • Oromia Pastoralists Association • Afar Pastoralist Development Association • Ethiopia Muslim's Relief and Development Association
Development partners	<ul style="list-style-type: none"> • WBG, USAID, AfDB, UK FCDO, FAO, WFP, Mercy Corps, CARE, Project Concern International, Catholic Relief Services Ethiopia
Kenya	
Ministries	<ul style="list-style-type: none"> • State Department of Livestock, Ministry of Livestock, Agriculture and Fisheries (operates KLIP) • National Drought Management Authority, Ministry of Devolution & ASALs (leading the HSNP)
Livestock sector associations	<ul style="list-style-type: none"> • Kenya Livestock Marketing Council • Kenya Livestock Producers Association • Kenya Feed Manufacturers Association
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: Equity Bank (bank for HSNP); Kenya Commercial Bank; Co-Operative Bank; First Community Bank • Mobile cash: M-Pesa (Safaricom); Airtel Money (Airtel); Sendwave • Insurance: APA Insurance (underwriter KLIP, underwriter IBLI); Takaful Insurance of Africa (formerly underwriting KLIP, IBLI) • Other: Agent for Inclusive Insurance Development
NGOs	<ul style="list-style-type: none"> • Turkana Pastoralist Development Organization • Kenya Markets Trust
Development partners	<ul style="list-style-type: none"> • WBG, UK FCDO, FAO, WFP
Somalia	
Ministries	<ul style="list-style-type: none"> • Ministry of Livestock, Forestry and Range (at IBLI conferences) • Ministry of Humanitarian Affairs and Disaster Management (at IBLI conferences)
Livestock sector associations	<ul style="list-style-type: none"> • NAFAQO Butchers and Slaughter Association • Somaliland Meat Development Association • Somaliland Pastoral Forum
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: Amal Bank, Dahabshil Bank, the International Bank of Somalia, Premier Bank, Global Tech Bank and Salaam Somali Bank (targeting community saving and loan groups) • Mobile cash: 11 money transfer businesses registered with the Central Bank of Somalia • Insurers: First Takaful and Re-Takaful Insurance Company (FISO Takaful Insurance); Takaful Insurance of Africa; Horn of Africa Insurance
NGOs	<ul style="list-style-type: none"> • BRCiS NGO consortium • SomReP NGO consortium • Agricultural Development Organization • Candlelight • Gargaar Relief Development Organization
Development partners	<ul style="list-style-type: none"> • UK FCDO, EU, FAO, WBG, USAID, WFP, Swiss Development Cooperation (interested in livestock insurance), BRCiS NGO consortium, SomReP NGO consortium

South Sudan	
Ministries	<ul style="list-style-type: none"> • Ministry of Agriculture (at IBLI conferences) • Ministry of Environment (IDDRSI focal point)
Livestock sector associations	<ul style="list-style-type: none"> • Pastoralists Association • Nile Community Development Organization (NICODO) dairy associations
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: no information • Mobile cash: NilePay Mobile Money; M-Gurush/Zain; MTN South Sudan • Insurers: no information
NGOs	<ul style="list-style-type: none"> • Organization for Peace, Relief and Development • Assistance Mission for Africa
Development partners	<ul style="list-style-type: none"> • UK FCDO, FAO, EU, WFP
Sudan	
Ministries	<ul style="list-style-type: none"> • Ministry of Agriculture (at IBLI conferences)
Livestock sector associations	<ul style="list-style-type: none"> • Chamber of livestock, meat and slaughter house • Dairy sub-chamber
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: Agricultural Bank of Sudan Microfinance Initiative; Bank of Khartoum; Savings and Social Development Bank • Mobile cash: Hassa/Bank of Khartoum; Qrooshy/Faisal Islamic Bank • Insurers: Shiekan Insurance (only livestock insurer in Sudan)
Development partners	<ul style="list-style-type: none"> • WFP, IFAD, FAO, WBG
Uganda	
Ministries	<ul style="list-style-type: none"> • Office of the Prime Minister (at IBLI conferences; leading Northern Ugandan Social Action Fund) • Ministry of Agriculture, Animal Industry and Fisheries (at IBLI conferences) • Ministry of Finance, Planning and Economic Development (at IBLI conferences)
Livestock sector associations	<ul style="list-style-type: none"> • Uganda Meat Producers Cooperative Union Ltd • Uganda Beef Producers Association • Uganda Manufacturers Association (animal feed)
Financial service providers	<ul style="list-style-type: none"> • Banks in pastoralist areas: Centenary Bank (lending to pastoralist associations) • Mobile money: Sendwave • Insurers: cInsurance (underwriting Centenary pastoralist portfolio)
NGOs	<ul style="list-style-type: none"> • Coalition of Pastoralist Civil Society Organizations • Karamoja Livestock Development Forum
Development partners	<ul style="list-style-type: none"> • USAID, FAO, UK FCDO, WBG

3.3 Major livestock development programs in the IGAD region

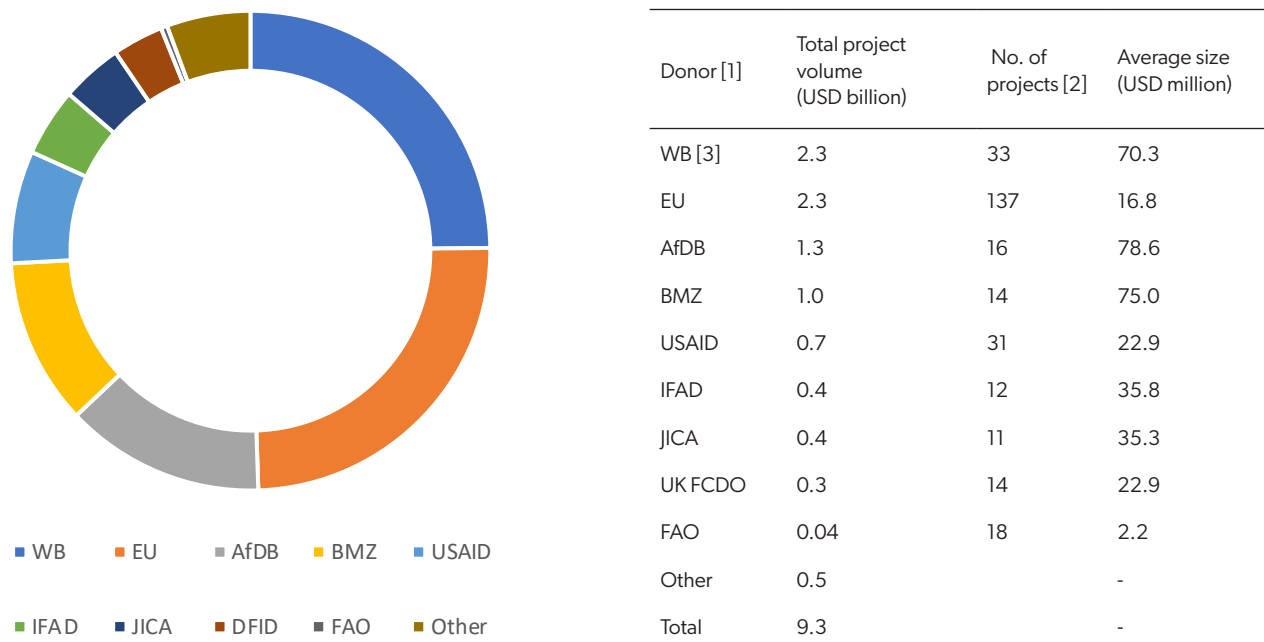
3.3.1 Portfolio overview of drought resilience projects in the IGAD region

WBG and the EU are the largest donors for drought resilience projects in the region, followed by AfDB and the German Federal Ministry for Economic Cooperation and Development (BMZ). On its website, IDDRSI maintains a comprehensive database of all major projects relevant to drought resilience being implemented in the region.¹¹ The database lists a total volume of USD 9.3 billion worth of ongoing projects contributing to one of the Priority Intervention Areas of IDDRSI. Of these, WBG- and EU-financed projects each contribute USD 2.3 billion (25%),

¹¹<http://3w.igad.int/map/index.html>.

followed by USD 1.3 billion (13%) by AfDB-financed projects, and USD 1 billion (11%) by BMZ-financed projects (Figure 16) EU-financed projects seem to be generally smaller in volume. Average project size is around USD 39 million, with WBG-, AfDB- and BMZ-financed projects generally larger (USD 75 million) and EU-financed projects smaller (USD 17 million).

Figure 16: Volume of ongoing drought resilience projects as per the IDDRSI database (December 2020).



Source: Calculated from IDDRSI list of drought resilience projects active in the IGAD region (<http://3w.igad.int/map/index.html>).

[1] Some projects are funded by multiple donors and have been double-counted. Some projects are co-funded by country governments; government contributions have not been excluded from the analysis.

[2] Some projects are supported by multiple donors – these are counted once for each donor.

[3] The IDDRSI database lists USD 3.6 billion WB support for the Productive Safety Net Program in Ethiopia. This number has been corrected downwards to USD 365 million as this seems to be a presentation error (e.g. the specific IDDRSI project website lists USD 365 million too) (<http://3w.igad.int/map/profile.html?rcode=igadregions&id=331>)

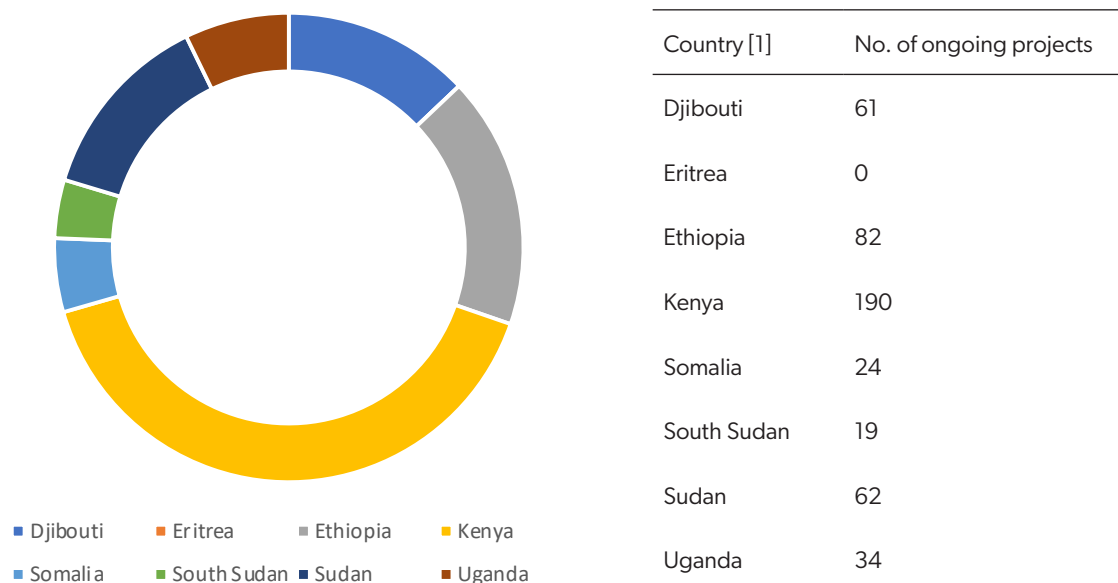
AfDB – African Development Bank, BMZ – The German Federal Ministry for Economic Cooperation and Development EU – European Union, FAO – Food and Agricultural Organization of the United Nations, IFAD – International Fund for Agricultural Development, JICA – Japan International Cooperation Agency, UK FCDO – United Kingdom Foreign, Commonwealth and Development Office, USAID – United States Agency for International Development, WBG – World Bank Group.

Drought-resilience projects in the IGAD region focus disproportionately on Kenya, while very few interventions are being conducted in Eritrea and Sudan.

Most ongoing drought resilience projects in the IGAD region focus on Kenya – more than twice as many than in the country with the second-most projects, Ethiopia. Relative to its overall size, Djibouti is also pursuing many drought resilience projects. Presumably due to the respective political situations, none or very few drought resilience projects are being implemented in Eritrea¹² and South Sudan (Figure 17). An analysis of the IGAD sub-regions that have been targeted most by all projects in the IDDRSI database reveals that pastoralist areas in Sudan have also received relatively little attention. It also shows that within countries, some sub-regions are receiving relatively more attention from drought resilience projects – for example, Turkana in Kenya, Somali in Ethiopia and Kassala in Sudan (Table 11).

¹²The IDDRSI project database states that no projects are being conducted in Eritrea but this does not seem to be the complete picture. For example, the AfDB-funded Drought Resilience and Sustainable Livelihood Programme for the Horn of Africa (DRSLP) also includes several interventions in Eritrea (see below).

Figure 17: Geographic focus of ongoing drought resilience projects in IGAD region (December 2020).



[1] Some projects are implemented in multiple countries – these are counted once for each country.

Source: Calculated from IDDRSI list of drought resilience projects active in the IGAD region (<http://3w.igad.int/map/index.html>)

Table 11: Targeting frequency of most-important pastoralist sub-regions by drought resilience projects in the IGAD region.

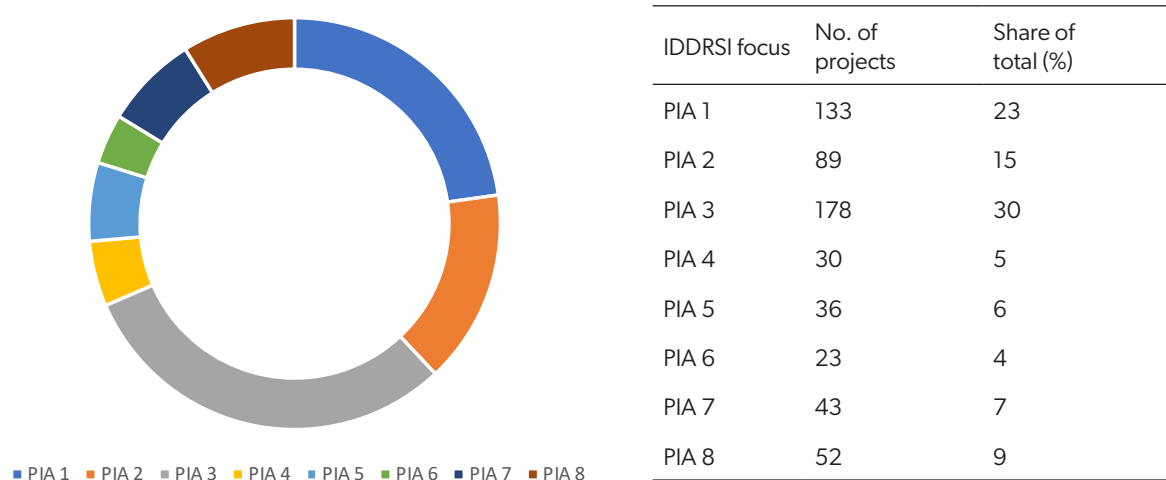
No. of drought resilience projects targeting main pastoralist regions in IGAD region					
KEN-Turkana	97	DJI-Dikhil	43	SDN-Kassala	19
KEN-Marsabit	86	DJI-Tadjourah	41	ETH-SNNRP	18
KEN-Garissa	85	ETH-Somali	38	SDN-North Kurdufan	15
KEN-Isiolo	83	DJI-Arta	35	SDN-South Kordofan	12
KEN-Mandera	82	UGA-Abim	33	SDN-Blue Nile	12
KEN-Wajir	81	UGA-Kotido	32	SDN-Al Qadarif	12
KEN-Tana River	77	UGA-Kaabong	29	SDN-White Nile	10
KEN-Samburu	69	SOM (all regions)	28	SDN-Sennar	9
KEN-Kajiado	64	UGA-Nakapiripirit	27	SDN-South Darfur	9
KEN-Baringo	63	UGA-Moroto	26	SDN-West Darfur	8
KEN-Laikipia	61	ETH-Oromia	24	SDN-Al Jazirah	8
DJI-Obock	46	SSN (all regions)	24	SDN-North Darfur	8
DJI-Ali Sabieh	45	ETH-Afar	20	SDN-West Kurdufan	4

DJI – Djibouti, ETH – Ethiopia, KEN – Kenya, SDN – Sudan, SOM – Somalia, SSN – South Sudan, UGA – Uganda.

Source: Calculated from IDDRSI list of all drought resilience projects (active and inactive) in the IGAD region (<http://3w.igad.int/map/index.html>)

Most ongoing drought resilience projects in the IGAD region focus on increasing adaptive capacities of drought-prone ASAL populations. Analysis of the IDDRSI data shows that 30% of ongoing drought resilience projects in the IGAD region focus on IDDRSI Project Intervention Area (PIA) 3: Enhanced production and livelihood diversification: Increasing the adaptive capacities of the drought-prone ASAL communities. Twenty-three per cent focus on PIA 1: Natural resources and environment management: Enhancing drought-prone communities' access to and use of sustainably managed natural resources and environmental services. Fifteen per cent focus on PIA 3: Market access, trade and financial services: Improving transport, market infrastructure and financial services in the ASALs (Figure 18).

Figure 18: Focus of ongoing drought resilience projects in the IGAD region (December 2020).



PIA – Project Intervention Area.

Source: Calculated from IDDRSI list of drought resilience projects active in the IGAD region, <http://3w.igad.int/map/index.html>

3.3.2 Major regional projects focusing on pastoralists

This section presents a selection of major regional projects that focus or have focused on supporting pastoralists.

One completed and three ongoing projects are presented as well as two that are still under preparation. Projects have been selected for their focus on multiple countries, overall size and/or particular relevance in the pastoralist drought development context.

Name	Status	Duration	Funding	Countries	Donor	Implementer
Building Resilience and Adaptation to Climate Extremes and Disasters (BRACED)	Complete	2013–19	USD 39 m	ETH, KEN, SSN, SDN, UGA	UK FCDO	Action Contre la Faim; Concern Worldwide; Farm Africa; Mercy Corps
BRACED was a program active until 2019 funding NGO projects in 13 developing countries enhancing the resilience of poor people to extreme weather events. In Ethiopia, BRACED funded Christian Aid, helping 1.2m people to adapt to climate variability by sharing climate forecast data and via behavioural change. It also funded Farm Africa to test innovative market-based tools to improve the resilience of another 350,000 pastoralists and agro-pastoralists. In Kenya and Uganda, BRACED supported Action Contre la Faim and Mercy Corps' PROGRESS project to strengthen the drought resilience of pastoralists in the Kenya/Uganda cross-border Karamoja cluster, including through financial inclusion. In South Sudan, BRACED financed Concern Worldwide in supporting 250,000 vulnerable farmers and agro-pastoralists to become resilient to climate shocks. And in Sudan, BRACED supported research in nomadic pastoralist communities and conducted conflict mediation (BRACED 2019).						

Name	Status	Duration	Funding	Countries	Donor	Implementer
Drought Resilience and Sustainable Livelihood Programme for the Horn of Africa (DRSLP)	Ongoing	2012 to date	USD 294 m	DJI, ERI, ETH, KEN, SOM, SDN	AfDB	Governments; IGAD
	Under preparation		+USD 25.3 m (+USD 250 m planned)			
AfDB launched the DRSLP in 2012 as a 15-year program to support drought resilience in all countries in the IGAD region, focusing on pastoralist areas. So far, USD 294 million in grants and loans has been invested in projects in Djibouti, Eritrea, Ethiopia, Kenya, Somalia and Sudan. The DRSLP is being implemented under the overall coordination of the IGAD Secretariat. The program has been designed in multiple overlapping phases, each of which is sub-divided into multiple projects, with new ones being designed as the overall program progresses. So far, AfDB has approved DRSLP projects in five phases (Table 12). Programme activities have largely focused on promoting the sustainable use of natural resources, facilitating market access and trade, diversifying pastoralist livelihoods, and enhancing livestock production and health (AfDB 2012, 2014, 2015, 2016a, 2019b). The DRSLP has also been supplemented by an additional USD 25.3 million in grant resources from the Global Environment Facility for Djibouti, Kenya, Somalia and Sudan, financing complementary interventions to the DRSLP (AfDB 2016b, 2017).						

Table 12: Approved phases under the Drought Resilience and Sustainable Livelihood Programme for the Horn of Africa.

Phase	Countries	Amount (USD million)	Activities
Phase 1 (2013–17)	DJI, ETH, KEN, IGAD	121	<ul style="list-style-type: none"> Component 1 (natural resource management): Enhanced rainwater harvesting infrastructure development; improved groundwater development. Component 2 (livestock infrastructure development): Infrastructure for market access; improved rangeland management; improved livestock health. Component 3 (project management and capacity building): National project management; support to IGAD Secretariat.
Phase 2 (2014–20)	ERI, ETH, SDN	109	<ul style="list-style-type: none"> Component 1 (natural resource management): Improved water resources mobilization; enhanced sustainable land management; improved access to natural resources. Component 2 (market access and trade): Market support infrastructure; gender sensitive value chain development; improved livestock mobility and trade in livestock/livestock products. Component 3 (livelihoods support): Livestock production and health enhanced; food and feed production improved; livelihood diversification enhanced.
Phase 3 (2015–20)	DJI, SDN	31.3	<ul style="list-style-type: none"> Component 1 (natural resource management): Improved water resources mobilization; enhanced sustainable land management; Improved women participation and decision-making skills in water resource management Component 2 (market access and trade): Market support infrastructure developed; gender sensitive value chain development enhanced; livestock mobility and trade of livestock and products improved Component 3 (livelihoods support): Enhanced livestock production and health; improved food and feed production; enhanced livelihood diversification
Phase 4 (2017–21)	ERI	7.7	<ul style="list-style-type: none"> Component 1 (natural resource management): Improved water resources mobilization; enhanced sustainable land management Component 2 (livelihood diversification): Provision of income diversification packages; prevention of milk post-harvest losses Component 3 (capacity building): Training of trainers and farmers
Phase 5 (2020–25)	ERI	25.5	<ul style="list-style-type: none"> Component 1 (infrastructure & natural resource management): dam & irrigation development; domestic water; watershed management Component 2 (livelihood diversification & marketing): Minimum integrated agriculture household package; agro processing and value additions; support to market linkages market linkages promoted. Component 3 (livestock and plant health & production): Improvement of animal production; improved animal and plant health; human public health and disease control
Total		294	

Currently, AfDB is in the process of preparing the next phase of the DRSLP as its contribution to AfDB/WBG Horn of Africa initiative (Governments of Djibouti, Eritrea, Ethiopia, Kenya and Somalia 2019). The total planned volume is USD 250 million, including USD 137.5 million from AfDB and the rest from other sources including client government budgets. All IGAD countries are planned to benefit from AfDB support: building on the previous phases, the next phase is currently planned to focus on (i) strengthening the resilience of drought-prone areas and pastoral and agro-sylvo-pastoral production systems to climate change; (ii) supporting agribusiness development, including financial inclusion measures and value chain upgrading for pastoralists; and (iii) strengthening the adaptive capacity to climate change. The next phase is also planned to explore sovereign and micro applications of IBLI at the regional and national levels (AfDB 2019a and based on consultations with AfDB).

Notes: DJI – Djibouti, ERI – Eritrea, ETH – Ethiopia, IGAD – Intergovernmental Authority on Development, KEN – Kenya, SDN – Sudan

Name	Status	Duration	Funding	Countries	Donor	Implementer
Regional Pastoral Livelihoods Resilience Program	Ongoing	2014–21	USD 197 million	ETH, KEN, UGA	WBG	Governments, ICPALD
<p>Since 2014, this program has been the WBG flagship project supporting pastoralists in the Horn of Africa. Recognizing the cross-border nature of pastoralist livelihoods, the project primarily aims to develop regional solutions to building drought resilience. The project is being implemented independently by the governments of Ethiopia, Kenya and Uganda under the overall coordination by a project coordination unit housed at ICPALD. It has been structured to provide particular support to identified cross-border 'meta-clusters' and 'secondary clusters' that are characterized by a set of unifying – e.g. language, culture – factors (including Karamoja in Uganda; Turkana in Kenya; and Borena, Somali and Dhikil in Ethiopia). The project structure is intended to link drought insurance and finance to productivity improvements among pastoralists and strengthen pastoral value chains. The rationale followed is that insurance should maintain the income of pastoralists in times of shocks, allowing them to continue investing and breaking the cycle of low investment and low productivity.</p>						

Name	Status
Collaboration in Cross-Border Areas of the Horn of Africa Region	Ongoing
<p>The program objective is to prevent and mitigate the impact of local conflict in borderland areas between Ethiopia, Kenya, Somalia and Sudan, and to promote economic development and greater resilience. The program is composed of seven independent projects with separate implementing partners: the BORESHA and the RASMI projects targeting the tri-border region of Ethiopia, Kenya and Somalia; the Omo Delta and the SEEK projects targeting the northwest Kenya and southwest Ethiopia border; the 'Cross-border cooperation between Ethiopia and Kenya for conflict prevention and peacebuilding' and the SECCI projects targeting the Kenya-Marsabit/Ethiopia-Borena border; and one project targeting the western Ethiopia/eastern Sudan border.¹³ Project activities are listed in Table 13 (EU 2017).</p>	

Table 13: Project activities of program 'Collaboration in Cross-Border Areas of the Horn of Africa Region'

Project	Implementing partner	Region	No. of people	Activities
BORESHA	Danish Refugee Council	Tri-border ETH (Dolobay), KEN (Mandera), SOM (Gedo)	350,000	<ul style="list-style-type: none"> Livelihood support to the most vulnerable (e.g. business advisory to emerging entrepreneurs) Resilience building (e.g. training beneficiaries on best practices)
RASMI	NGO consortium led by Pact	Tri-border ETH (Dolobay), KEN (Mandera), SOM (Gedo)	15,000	<ul style="list-style-type: none"> Working with communities/with youth, women, government and religious leaders to increase social cohesion and strengthen local peace structures
Omo Delta	NGO consortium led by Vétérinaires sans Frontières	Northwest KEN (Turkana, Marsabit)/ southwest ETH (South Omo, Bench Maji)	45,000 households	<ul style="list-style-type: none"> Enable young people and women to access finance and informal trade markets Work on rehabilitation of water structures Improve production and productivity of fisheries Support livestock disease surveillance systems
SEEK		Northwest KEN (Turkana, Marsabit)/ southwest ETH (South Omo, Bench Maji)	15,000	<ul style="list-style-type: none"> Strengthen existing formal and informal institutions and developing social cohesion for peace building
Cross-border cooperation between Ethiopia and Kenya for conflict prevention and peacebuilding	UNDP	KEN (Marsabit)/ ETH (Borena)		<ul style="list-style-type: none"> Strengthen local peace architecture Establish conflict early warning systems Deliver tangible peace dividends to prevent resource-based conflict
SECCI	UNDP/ UNEP	KEN (Marsabit)/ ETH (Borena)		<ul style="list-style-type: none"> Strengthen regional policy frameworks, structures and protocols by engaging local communities and different actors in process
Project	GIZ	Western ETH/ Eastern SDN		<ul style="list-style-type: none"> Increase vocational training opportunities for young people on both sides of border Promote agricultural production Help trade development

GIZ – German Corporation for International Cooperation, UNDP – United Nations Development Programme, UNEP – United Nations Environment Programme

¹³Building Opportunities for Resilience in the Horn of Africa (BORESHA); Regional Approaches for Sustainable Conflict Management and Integration (RASMI); Support As.

Name	Status	Duration	Funding	Countries	Donor	Implementer
Horn of Africa Initiative	Under preparation	To be determined	To be determined	DJI, ERI, ETH, KEN, SOM	AfDB, WBG, EU	Governments

AfDB, WBG and the EU are considering launching a major investment program in the Horn of Africa, with a volume of up to USD 15 billion. While the initiative is still emerging and taking shape, the governments of Djibouti, Eritrea, Ethiopia, Kenya and Somalia issued a communiqué in late 2019 outlining the intended investment pillars, including on (i) regional infrastructure networks, (ii) trade and economic integration, (iii) building resilience and (iv) strengthening human capital (Governments of Djibouti, Eritrea, Ethiopia, Kenya and Somalia 2019).

Pillar 3 includes the development of a regional pastoralist livestock insurance scheme. The regional investment estimates for this pillar have changed over time; WBG currently debates investing USD 200 million over five years, alongside AfDB investments through the DRSLP which have not been specified thus far. Insurance would be the entry point to enhance the financial inclusion of pastoralists (through promotion of savings and access to credit) to strengthen their resilience to drought by protecting their livestock assets and thereby protect their livelihoods and finally to increase productivity and incomes (by delivering insurance with complementary programs designed to improved pastoral production systems). Pillar 3 covers four key activities or sub-components including support for (i) premium finance for a target of 600,000 households; (ii) livestock insurance risk infrastructure such as product development, digital technology and platforms for insurance delivery, premium collection and payouts and regional databases; (iii) technical assistance for insurance and digital financial services, awareness creation and capacity building in the eight countries, capacity building for a regional implementing entity and insurance sector, monitoring and evaluation, etc. and; (iv) credit provision to pastoralists and other value chain actors to invest in enhancing production and support services such as feed production and veterinary services (WBG 2020a).

WBG staff have shared with the DIRISHA team that country interest in the regional initiative was confirmed during the 2020 annual meetings, including for pastoralist livestock insurance. WBG is currently in the process of analysing different options for the design of a regional livestock insurance program. The DIRISHA study is intended to feed into this design process.

3.4 Drought and other disaster risk financing approaches benefiting pastoralists in the IGAD region

The vast majority of disaster response funding in the IGAD region is provided through ex-post humanitarian assistance, which tends to be slow, unreliable and costly. Experience shows that governments and donors in the Horn of Africa tend to respond to large-scale droughts using ad-hoc emergency interventions. Government budgetary resources are being reallocated for emergency response or international donors are requested to provide support. The immense cost of over USD 60 billion provided in international humanitarian assistance to the region over the last 20 years is a stark reminder of this (Figure 15 and Table 9). There tends to be little financial planning of governments for the next crisis. This approach is by and large ineffective: international aid tends to arrive late, and intervening earlier would almost always be more cost effective. In addition, after each drought disaster, it is unclear how much aid will be provided and whether it will cover humanitarian needs (indeed, often it does not). The nature of ex-post drought response in the Horn of Africa and the benefits of an alternative approach of planning ahead and intervening earlier have been covered extensively by the literature (e.g. Cabot Venton et al. 2012; Clarke and Dercon 2016; Cabot Venton 2018).

Across the region, pre-arranged drought risk financing initiatives are gaining traction but progress is very uneven.

Over the past decade, governments in the Horn of Africa have increased their financial planning for drought disasters significantly and have started to adopt pre-arranged financing (disaster risk financing) instruments to enable a more effective disaster response. However, there continue to be great differences between the IGAD countries. Table 14 presents the status quo of the adoption of disaster risk financing instruments among them. Further details can be accessed in the country annexes in Volume II to this report.

- **Kenya** has been the most enthusiastic about experimenting with new disaster risk financing mechanisms. Various micro-level index insurance schemes had been piloted for crop farmers and pastoralist since the late 2000s, until, in 2015, the Kenyan Government established publicly subsidized national crop and livestock insurance schemes – the respective IBLI¹⁴ programs are discussed in Section 4.2. These enable farmers and pastoralists to purchase insurance against drought and thus reduce the burden on the government or international partners to support in case of a drought (WBG 2016b). In 2015, the government also implemented a flexible scalability mechanism of the HSNP, an unconditional cash transfer program in the ASALs, which expands rapidly to cover additional households in case of drought. Furthermore, from 2014 until 2016, the government purchased sovereign drought insurance from ARC. And in 2018, Kenya was the first African country to adopt a national disaster risk financing strategy (Government of Kenya 2018a, 2019), as well as the first International Development Association country in the world to receive a WBG contingent line of credit, the ‘Catastrophe Deferred Drawdown Option’. However, despite the many initiatives, there are significant challenges, including on the sustainability, alignment and complementarity of many of the disaster risk financing schemes (Lung 2020a).
- **Ethiopia** is thus far using fewer disaster risk financing instruments than Kenya to finance drought response but has equally exerted major efforts to improve financial drought response planning over the last decade.¹⁵ The Government operates a large unconditional cash transfer program, the Productive Safety Net Program, whose core budget finances the needs of eight million chronically food insecure people, many of whom are located in drought-prone pastoral and agro-pastoral regions of the country. In addition, through the Productive Safety Net Program, federal contingency budget, it can rapidly scale up operations to cover additional people who are transitory food insecure due to a shock such as a severe drought. Beyond that, the Government has so far not adopted further disaster risk financing instruments but instead relies on regular humanitarian appeals to mobilize funding for emergency response. This national disaster funding system has proven to be functional and able to provide rapid assistance to large numbers of vulnerable people in need, for example after the 2015/16 drought, where a staggering additional 10 million people received rapid assistance under the Productive Safety Net Program (Drechsler et al. 2017). IBLI solutions have also been implemented in Ethiopia since 2012 and are discussed in Section 4.2.
- **Uganda** has also been experimenting with pre-arranged financing instruments in order to respond to disasters more effectively. In 2016, it set up the Third Northern Ugandan Social Action Fund, a social safety net that includes a scalable public works mechanism, allowing it to rapidly increase financial assistance to affected people in case of a drought (Maher and Poulter 2018). The Government is rolling out a national crop and livestock insurance scheme to protect vulnerable crop and livestock producers against the impacts of droughts and other perils (WBG 2019d). However, many challenges remain – for example, unlike other countries in the region, Uganda neither has a national contingency fund nor a strategic grain reserve to respond to disasters.
- In **Djibouti, Eritrea, Somalia, South Sudan and Sudan**, the disaster risk financing agenda has not made much progress so far. For severe droughts/other shocks, these countries rely almost exclusively on international assistance to cover the needs of those affected.

Table 14: Use of drought risk financing instruments across IGAD countries.

Country	Disaster risk financing strategy	Risk retention				Risk transfer	
		National disaster fund	Strategic grain reserve	Scalable safety nets	Contingent credit line	Sovereign risk transfer (ARC)	Livestock insurance
Djibouti		√				Signed memorandum of understanding	
Eritrea							
Ethiopia		√	√	√			√
Kenya	√	√	√	√	√	(√)	√
South Sudan							
Somalia							

¹⁴As noted in the introduction, the term IBLI is used here to refer to any type of satellite-based forage availability index insurance in the IGAD region and does not just refer to the micro-level IBLI schemes in Kenya and Ethiopia.

¹⁵In 2006 Ethiopia was the first country in Africa to purchase a macro-level drought risk index insurance to provide early response funding. Cover was designed by WFP and the product underwritten by AXA with premium financing provided by USAID. There was no payout on the product and the Government of Ethiopia did not renew cover in subsequent years. Instead Ethiopia has invested heavily in a LEAP – Livelihoods, Early Assessment and Protection. Developed by the Government of Ethiopia with support from WFP, LEAP is an early warning-early response tool which triggers contingency funding ahead of severe droughts or floods to provide food or cash to the people projected to need early assistance.

Country	Disaster risk financing strategy	Risk retention				Risk transfer	
		National disaster fund	Strategic grain reserve	Scalable safety nets	Contingent credit line	Sovereign risk transfer (ARC)	Livestock insurance
Sudan						Signed memorandum of understanding	√
Uganda				√			√

Source: Various sources; see Volume II of this report for more details; ARC – African Risk Capacity

Scalable safety nets play an increasingly important role as a drought response mechanism in the region and could be integrated with IBLI solutions. As described above, Ethiopia, Kenya and Uganda all operate cash transfer programs for the poorest, which include a scalability component enabling rapid horizontal expansion to additional households in order to respond to shocks such as severe droughts. There are two important ways in which these programs could be integrated with IBLI: (i) An IBLI-based insurance mechanism could be used as a financing mechanism for the scalability component of these programs. This is in line, e.g. with the approach taken in Kenya, where the government has, in the past, purchased sovereign drought insurance that would have been disbursed to beneficiaries through the safety net (OPM 2017). (ii) These programs use databases of pre-registered vulnerable households that services can be provided to quickly during emergencies. Similar databases are operated by other partners in the region, including the extensive WFP SCOPE¹⁶ database, the International Organization for Migration BRaVE¹⁷ database, and databases by ministries of social affairs. These data could potentially be leveraged to enrol beneficiaries for IBLI programs. For further details on each country, see Volume II to this report.

¹⁶SCOPE is WFP's beneficiary information and transfer management platform that helps WFP to register and know better the people it serves under its humanitarian assistance programs (cash-based transfers, commodity voucher and in-kind). <https://docs.wfp.org/api/documents/7e86e5a6a70447aba713e3cd4e759d8d/download/>

¹⁷The International Organization for Migration's BRaVE is a biometric beneficiary data management system used to strengthen humanitarian responses. Since its rollout in 2014, the system currently supports humanitarian operations in South Sudan, Nigeria, Ethiopia and the Philippines. <https://www.iom.int/news/iom-wfp-conduct-first-beneficiary-data-exchange-south-sudan>

4. IGAD insurance markets and index-based livestock insurance for pastoralists

This section presents an overview of insurance market development in the IGAD region, with an in-depth look at the region's experience with livestock insurance. It looks at the uptake and performance of the traditional indemnity-based and IBLI programs,¹⁸ as well as the lessons learned that should guide any future livestock insurance program in the region. The section also examines the differences between applications of IBLI insurance at different levels of aggregation from individual pastoralist micro-level IBLI through to options for macro-level sovereign risk financing options for vulnerable pastoral communities. Further details on livestock insurance provision in each of the IGAD countries are included in Volume II of this report.

4.1 Status of insurance market development in the IGAD region

4.1.1 Insurance

There are wide variations in the status of development of insurance markets across the eight IGAD countries.

Development ranges from Kenya, which is one of the largest insurance markets in sub-Saharan Africa with total insurance premium volume of USD 2.1 billion in 2018, through to Eritrea, Somalia and South Sudan, where insurance markets are poorly developed. Sudan has the second largest insurance market by premium volume of USD 494 million, followed by Ethiopia (USD 314 million), Uganda (USD 202 million) and Djibouti (USD 21 million). The insurance market premium in Eritrea is only USD 16.3 million and in Somalia even lower at less than USD 6 million. Insurance demand and penetration is low in all IGAD countries, with total insurance premium (life and non-life) ranging from a high of 2.6% of GDP or USD 41 per capita in Kenya to a low of only 0.4% of GDP and USD 3 per capita in Ethiopia (Table 15).

Table 15: Status of insurance market development and insurance penetration in IGAD countries.

Country	Total market premium (USD) 2018	Global rank by insurance premium	Insurance penetration (total premium) (% GDP 2017)	Insurance penetration (total premium) USD/capita	Insurance penetration (non-life premium) (% GDP 2017)	Insurance penetration (non-life premium) (USD/capita)
Djibouti	21.3	n.a.	0.8	20		
Eritrea	16.3	n.a.	n.a.	n.a.	n.a.	n.a.
Ethiopia	314	95	0.4	3	0.4	2.7

¹⁸As noted in the introduction, the term IBLI is used here to refer to any type of satellite-based forage availability index insurance in the IGAD region and does not just refer to the micro-level IBLI schemes in Kenya and Ethiopia.

Country	Total market premium (USD) 2018	Global rank by insurance premium	Insurance penetration (total premium) (% GDP 2017)	Insurance penetration (total premium) USD/capita	Insurance penetration (non-life premium) (% GDP 2017)	Insurance penetration (non-life premium) (USD/capita)
Kenya	2,134.8	63	2.7	40.7	1.1	16.4
Somalia	< 6.0	n.a.	n.a.	n.a.	n.a.	n.a.
South Sudan	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Sudan	494 (2016)	n.a.	0.5	12.5	0.4	10.8
Uganda	201.8	127	0.8	4.7	0.4	2.4

Sources: WBG and ILRI 2019; Axco 2020a, 2020b, 2020c, 2020d; WBG 2020b.

Notes: n.a. = not available

The number of insurance companies varies widely according to the status of insurance market development in the IGAD countries. In Kenya, there are currently 40 private commercial insurance companies including 31 non-life or general insurance companies, eight composite (life and non-life insurance companies) and one specialist takaful insurance company. In Kenya, the top five non-life insurance companies generate 37% of the market premium. The Kenyan insurers actively compete against one another for clients and market share and they maintain branch offices and distribution networks and agents in most counties and major cities of the country. Uganda, Ethiopia and Sudan also have a relatively large number of mainly non-life insurance companies actively competing in their markets. In these four larger insurance markets, the insurance sector underwrites crop and livestock insurance as part of their non-life insurance portfolios. At the other extreme, Eritrea has only one state majority-owned life and non-life insurance company. In Djibouti, there are only two composite insurance companies that control the entire market: they only have single offices in Djibouti city and lack regional offices and distribution channels with which to promote and market insurance products to rural people (WBG 2020b). Similarly, there are only two active insurers in Somalia without rural distribution networks and only seven insurers in South Sudan (Table 16).

Table 16: Insurance market structure of IGAD countries.

Country	No. of licenced insurance companies	No. of life insurance companies	No. of non-life (general) insurance companies	No. of composite (life & non-life) insurance companies	No. of takaful insurance companies	Top three insurance companies	Share of market premium of top five insurers (%)	Licensed national re-insurance companies
Djibouti	2			2		GXA Insurance (61% market share) AMERGA (39% share)	100	
Eritrea	1 (monopoly)			1		National Insurance Corporation of Eritrea	100	
Ethiopia	17		8	9		Ethiopian Insurance Co. (state) Africa Insurance Co. Awash Insurance Co.	75 (Ethiopian Insurance Co., 41%)	Ethiopian Re 2016
Kenya	40		31	8	1	Jubilee Insurance Co. Ltd. CIC General UAP Old Mutual	37	Kenya Re (60% state)

Country	No. of licenced insurance companies	No. of life insurance companies	No. of non-life (general) insurance companies	No. of composite (life & non-life) insurance companies	No. of takaful insurance companies	Top three insurance companies	Share of market premium of top five insurers (%)	Licensed national re-insurance companies
Somalia	2				2	Takaful Insurance of Africa Somalia & First Somali Takaful & Re-Takaful	100	
South Sudan	7		2	5		UAP Insurance South Sudan New Susan Insurance Co. Ltd National Insurance Co. Ltd		
Sudan	13		6	8	All companies are Sharia compliant	Sheikan Insurance & Reins. Co (state) Islamic Insurance Co. Sudanese Insurance Co.	72 (Sheikan, 32%)	National Reinsurance Co. 2016
Uganda	29	9	19		1 microinsurance	Jubilee UAP Old Mutual	68	Uganda Reinsurance Co. Ltd. (2013)

Sources: WBG and ILRI 2019; Axco 2020a, 2020b, 2020c, 2020d; WBG 2020b.

Four of the IGAD countries currently have active agricultural crop and livestock insurance markets. Kenya is the largest and most diversified agricultural insurance market in terms of products and services provided by up to 10 commercial insurance companies with an estimated agricultural insurance premium volume of USD 7.5 to USD 10.0 million for crops and livestock in 2019/20, followed by Ethiopia, Sudan and Uganda. Currently there is no agricultural crop or livestock insurance provision in Djibouti, Eritrea, Somalia and South Sudan. The premium volume for traditional livestock insurance and/or IBLI in the four IGAD countries is currently (2019–2020) small at USD 5–6 million in total, with a possible two thirds of the premium coming from the livestock index insurance programs in Kenya and in Ethiopia (Table 17).

Table 17: Availability of agricultural crop and livestock insurance in IGAD countries.

Country	Agricultural insurance availability [1]	No. of active agricultural insurers	Agricultural insurance premium (USD million) [2]	Livestock insurance available (traditional)	Livestock insurance available (index)	Livestock index micro-level	Meso-/macro-level livelihoods protection	Livestock insurance premium (USD million) [3]
Djibouti	None	0		None	None			
Eritrea	Very low (planned)	0 (1 planned)		None (planned)	None			
Ethiopia	Low	5–6 (pool)	5.0	Very restricted	Micro & meso	IBLI (8 yrs)	SIPE (2 yrs)	1.0–1.5
Kenya	Medium	8–10 (pool)	7.5–10	Restricted	Micro & macro	IBLI (10 yrs)	KLIP (5 yrs)	2.25–2.5
Somalia	Very low (planned)	0 (2 planned)		None (planned)	None (planned)			
South Sudan	None	0		None	None			

Country	Agricultural insurance availability [1]	No. of active agricultural insurers	Agricultural insurance premium (USD million) [2]	Livestock insurance available (traditional)	Livestock insurance available (index)	Livestock index micro-level	Meso-/macro-level livelihoods protection	Livestock insurance premium (USD million) [3]
Sudan	Low	4–5	5.8 (2016)	Restricted	None			1.0–1.5
Uganda	Low	11 (pool)	1.5–2.0	Very restricted	None (planned)			0.25

Sources: Various; country annexes, see Volume II of this report

[1] Agricultural insurance includes both crop and livestock insurance and, in the case of Uganda, and aquaculture insurance.

[2] Author's best estimates of 2019/20 total agricultural insurance premiums including crops, livestock, aquaculture except for Sudan, which are 2016 estimates.

[3] Author's best estimates of 2019/20 total livestock insurance premiums except for Sudan, which are 2016 estimates.

In three of the four countries with active agricultural insurance markets, the commercial and state insurers have formed co-insurance pools to underwrite the business. This includes a co-insurance pool of four insurers in Ethiopia led by the national insurer Ethiopian Insurance Corporation which is underwriting a Satellite Index Insurance for Pastoralists in Ethiopia (SIPE) program; in Kenya co-insurance pools of up to seven private commercial insurers are underwriting crop and livestock insurance; and in Uganda, 11 co-insurers came together in 2016 to form an Agro-Insurance Consortium to underwrite the National Agricultural Insurance Scheme, NAIS, which offers crop and livestock insurance. There are considerable advantages of forming co-insurance pools including: the economies of scale and cost savings in sharing product design and rating costs, marketing and promotion and underwriting and administrative costs and in adjusting losses. Also, there are potential cost savings in the purchase of reinsurance due to the pooling and diversification of risk (Mahul and Stutley 2010).

In Kenya, Uganda and Sudan, governments provide financial support to the agricultural insurance programs, mainly in the form of premium subsidies. In Kenya, the government fully funds the premiums (100% subsidies) for vulnerable pastoralists who are insured under the Kenya Livestock Insurance Program (KLIP) and also provides 50% premium subsidies on the crop-credit insurance programs. In Sudan, the government provides 50% premium subsidies on both crop and livestock insurance premiums and in Uganda, under the Uganda Agricultural Insurance Scheme, the government funds differential premium subsidies according to the type of farmer: small farmers/herders qualify for a 50% premium subsidy, large farmers only 30% subsidy, and disadvantaged farmers in high risk regions of the country qualify for 80% premium subsidies.

4.1.2 Reinsurance

Reinsurance arrangements vary by country in the IGAD region. In the design of a regional pasture drought satellite index program, it will be necessary to take into account the different statutory and solvency and retention requirements for local insurers and legal and taxation arrangements for reinsurance cessions.

In the IGAD region, local insurers' capacity to retain risk is limited, particularly for catastrophe perils such as earthquakes, windstorm, floods and drought. For larger risks, it is therefore very common for insurers to front the business and to retain very little risk: they then enter both into local co-insurance arrangements with other local insurers and/or cede the greater part of their risk to local and international reinsurers, either on a facultative or treaty basis.

There are different compulsory reinsurance cession requirements in each of the IGAD countries. Ethiopia, Kenya, Sudan and Uganda have local national reinsurance companies, some of which have been partly or fully privatized over time. Where there is a national reinsurer, local insurers are usually required by insurance law to cede a proportion of each facultative risk and/or treaty portfolio to the national reinsurer: these compulsory cessions vary from a low of 15% in Uganda to a high of 40% in Sudan and the national reinsurer reserves the right to waive this compulsory cession on difficult risks. In addition, these four countries have entered into agreements to make additional automatic cessions of

between 5% and 10% to ZEP-RE,¹⁹ operating out of Nairobi, Kenya, and of 5% to the African Reinsurance Corporation (Africa Re) with headquarters in Lagos, Nigeria. Over and above these compulsory cessions, the local insurers are permitted to place their reinsurance business with international reinsurers (Table 18).

Table 18: IGAD countries' reinsurance arrangements.

Country	Local (national) reinsurance companies	Compulsory reinsurance cessions	International reinsurance cessions (% gross written premium 2017)	Main reinsurers
Djibouti			33.8	Africa Re ZEP-RE Best Re
Eritrea				Munich Re Africa Africa Re ZEP-RE
Ethiopia	Ethiopian Re 2016	Ethiopian Re: 25% treaty + 5% per risk Africa Re: 5%	25.9	Munich Re (Lead RI A-; follower BB)
Kenya	Kenya Re (60% state)	Kenya Re: 20% ZEP-RE: 10% Africa Re: 5%	29.6	Munich Re Swiss Re
Somalia				
South Sudan				
Sudan	National Reinsurance Company 2016	National Reinsurance Co.: 40% ZEP-RE: 10% Africa Re: 5%	28.5	Mainly retakaful reinsurers in the Arab, African and Asian markets. Limited cessions to European reinsurers
Uganda	Uganda Reinsurance Company Ltd. (2013)	Uganda Re: 15% ZEP-RE: 10% Africa Re: 5%	41.3	Munich Re Swiss Re

Source: Axco 2020a, 2020b, 2020c, 2020d.

In part of the IGAD region, reinsurance might need to comply with Sharia law (i.e. retakaful). This is particularly the case for Sudan and possibly Somalia (see Box 3 for the Sudanese example).

Box 3: Sudan – Sharia-compliant reinsurance (retakaful)

- Sudan presents a unique case. As the insurance market is run according to Islamic (Sharia) principles, insurers are required wherever possible to place their reinsurance in 'retakaful' markets with reinsurers that have thus been approved. Reinsurance with a conventional reinsurance company is permitted only when adequate retakaful alternatives are not available and as long as contributions paid to the reinsurer are minimized and the insurer does not receive commission from the reinsurer.
- Compulsory cessions and locally accepted reinsurance business are placed on a direct basis as is some business ceded to major European professional reinsurers. Reinsurance placements are under constant supervision by the Higher Sharia Board (HSB) and the Sharia committees of the insurance companies. Thus, the share of treaty reinsurance placed on a retakaful basis is estimated currently to be between 70% and 80% of all reinsurance placed.
- Currently, most general and life insurance in Sudan is reinsured with the state-owned Shiekan Insurance and Reinsurance Company, the National Reinsurance Company National RE and with ZEP-RE and Africa Re, which both have retakaful subsidiaries or windows. International retrocessions are then placed with retakaful markets in the Middle East and Asian (e.g. Malaysian) markets. Some business is also ceded to European insurers including a share of Shiekan's long-standing crop and livestock reinsurance treaty business. In 2010, ZEP-RE opened a retakaful window in Sudan, which increased the retakaful capacity in the local market and ensured that all ZEP-RE's acceptances are on a retakaful basis. Africa Re (headquartered in Lagos, Nigeria) launched a retakaful subsidiary in 2010 called Africa Takaful Reinsurance Company.

Source: Axco 2020c

¹⁹ ZEP-RE is the French acronym for PTA Reinsurance Company (compagnie de réassurance de la zone préférentielle).

4.1.3 Legal and regulatory framework and insurance and reinsurance institutions

The design of any regional satellite pasture drought or forage availability index insurance ('IBLI') program across the eight IGAD countries will need to ensure that it complies with local insurance legislation and regulations that apply in each country.

The legal basis of insurance law varies across the eight IGAD countries. Djibouti, as a French Department, adopts a 'civil' law (Roman) system and insurance is regulated by the CIMA Code.²⁰ The legal system in Ethiopia is based on a mixture of French civil law and local variations. Kenya and Uganda have continued to adopt British 'common' law systems²¹ post-independence and this is equally the basis of law in South Sudan. Sharia law applies to Sudan and to Somalia (Table 19).

In all countries, life and non-life insurance provision is governed by the terms and conditions of an insurance act or law except for Somalia where a new insurance act is being drafted by the government.²² In most countries, the insurance market is supervised and regulated by an insurance regulator, which is typically housed under the central bank or ministry of finance (Table 19). The tasks of the insurance regulator include the licencing of insurance companies, reinsurance companies, insurance brokers and loss adjusters; ensuring that the operations and activities of these entities comply with the insurance act; approving new insurance products and policies; and, where applicable, setting market tariffs and approving commission rates charged on life and non-life insurance policies. The insurance regulator also plays an important role in ensuring consumer protection and sometimes (e.g. in Kenya) in conducting insurance literacy and awareness campaigns.

Table 19: Legal and regulatory insurance mechanisms in IGAD countries.

Country	Insurance legislation	Insurance supervisor	Insurance association	Basis of insurance law	Takaful insurance (window)	Microinsurance legislation
Djibouti	CIMA code	Insurance Control Service		CIMA code	No	
Eritrea				British law		
Ethiopia	Proclamation to Provide for Insurance Business (No746/2012)	Insurance Supervisory Authority – National Bank of Ethiopia	Association of Ethiopian Insurers 2002	British law		
Kenya	Insurance Act, Chapter 487 (1985) and subsequent amendments	Insurance Regulatory Authority	Association of Kenyan Insurers 1987	British law	1	2019 Microinsurance Act
Somalia	No (in preparation WBG assistance)	No	No	Sharia law	2	
South Sudan	Laws of Southern Sudan: the Insurance Bill 2010	Insurance Commission/ Corporation		British law		
Sudan	Insurance Supervision Act 2001 (2018); Takaful and Insurance Act 2003	Insurance Supervisory Authority	Association of Sudanese Insurance and Reinsurance Companies	Sharia law 1993	All takaful insurers	
Uganda	Insurance Act 2017	Insurance Regulatory Authority	Uganda Insurance Association	British law	No	2017 Microinsurance Act

Sources: Axco 2020a, 2020b, 2020c, 2020d.

²⁰Conférence interafricaine des marchés d'assurance (Inter-African Conference on Insurance Markets), a regional insurance regulatory code adopted by a series of francophone African countries.

²¹The main difference between the two systems is that in common law countries, case law — in the form of published judicial opinions — is of primary importance, whereas in civil law systems, codified statutes predominate.

²²http://www.somalilandlaw.com/insurance_companies_bill.htm

The IBLI product is a non-traditional parametric or index-based insurance product and it will be necessary in each of the eight IGAD countries to obtain approval from the insurance regulator to launch the IBLI product into the market. None of the insurance acts in operation in the eight IGAD countries specifically mention or authorize 'index' insurance products; however, with the approval of the regulators in Kenya, Ethiopia and Uganda, agricultural crop and livestock index insurance has been offered and underwritten by general insurance companies for more than a decade.

In the IGAD region, a high proportion of the livestock herders/pastoralists are Muslims (including in Sudan, Somalia, Somali Region Ethiopia and in parts of northern Kenya (e.g. Wajir, Isiolo). In Sudan and Somalia, where Sharia law applies, all insurance companies are Takaful compliant and this also applies to Kenya where there is one takaful insurance company (Takaful Insurance of Africa), which also operates in Somalia. In Kenya, several private commercial insurance companies are also applying for takaful windows to permit them to underwrite takaful products and services separately from their mainstream commercial products. Currently in Ethiopia, none of the four insurers offering crop and livestock insurance have approved takaful windows to operate in regions of the country with large Muslim populations (Table 18).

4.2 Livestock insurance in the IGAD region

4.2.1 Types of livestock insurance

Livestock insurance products can broadly be segmented into two categories – traditional indemnity-based products and index-based products.

- a. **Traditional indemnity-based policies** insure against physical loss or damage to livestock resulting in death: these traditional products have been available for more than 300 years and their origins can be traced back to livestock producer-mutual insurance programs in Europe. These solutions tend to be unsuitable for the small-scale producers and particularly pastoralists, as insurers tend to set high standards to insurability, including, e.g., individual animal identification through tattooing or branding, ear tags or implantable micro-chips, veterinary certificates of vaccinations, and restricted animal movements. These conditions can often not be met by potential policyholders in extensive pastoral systems. In addition, distribution and administration of these policies tends to be too costly for low-income livestock holders. In the IGAD region, indemnity-based insurance for individual animals (mainly dairy cattle) is offered by insurers in Kenya, Sudan, Ethiopia and Uganda. Sudan has the largest traditional livestock indemnity-based insurance market in the region (see Volume II country annexes for further details).
- b. **IBLI products** are policies that provide payouts to policyholders based on a pre-defined quantitative index that approximates the impact of insured events on the policyholder. When the index is met, policyholders receive a payout. For livestock policies, typical indexes include livestock mortality rates and availability of forage resources. Index policies have been implemented commercially only during the past 20 years. Index-based insurance policies have been developed as a means to lower cost on policyholders as claims handling does not have to be conducted by loss adjusters but depends on an independently verifiable index. Index-based insurance also lowers problems of moral hazard and adverse selection that plague indemnity-based livestock (and crop) insurance products and programs.²³ Index insurance is a very flexible product that can be designed and implemented at various levels of risk aggregation, starting as a micro-level product which is retailed to individual farmers/livestock producers; or as meso-level cover purchased by regional risk aggregators including producer organizations, and financial institutions; and finally as a macro-level sovereign risk financing solution purchased by regional or national governments to finance early response to natural disasters (see Box 4 for further details).

²³ Moral hazard can be very high on indemnity-based livestock insurance programs unless individual animals are clearly tagged or branded or micro-chipped to prevent mortality claims being submitted for an uninsured animal that has died. Where animals are insured against theft, unscrupulous policyholders may sell their animals for slaughter and then claim the animals were stolen. Anti-selection tends to incur where livestock producers only insure some of their animals, often the older unproductive animals which have little or no sale value: they insure these animals at full market replacement value and then arrange for the animal to experience an accidental death and claim a new replacement high value young productive animal.

Box 4: Applications of parametric or index insurance at different levels of aggregation

- **Micro level (direct):** Policyholders are individuals, e.g. farmers, market vendors or fishers, who hold policies and receive payouts directly. These policies are often sold at the local level and retailed through a variety of channels, including microfinance institutions, farmers' cooperatives, banks, NGOs and local insurance companies. Premiums are either paid in full by clients or subsidized (or both).
- **Meso level (indirect):** Policyholders are risk aggregators such as associations, cooperatives, mutuals, credit unions or NGOs, whereby a (re)insurer makes payments to the risk aggregators, which then provide services to individuals.
- **Macro level (indirect):** Policies are held by governments or other national agencies within the international/regional reinsurance market. Payouts can be used to manage liquidity gaps, maintain governmental services or finance post-disaster programs and relief efforts for predefined target groups. Beneficiaries of these programs can be individuals. These schemes can be operationalized through regional risk pools.

Source: Schaefer and Waters 2016

In the IGAD region, various IBLI programs are currently being underwritten by insurers in Kenya and Ethiopia

either as micro-level programs targeted at individual pastoralists or as modified macro-level livelihoods protection covers purchased by governments or development partners on behalf of large numbers of targeted and selected vulnerable pastoralists (beneficiaries). The key differences between these IBLI programs are described in Section 4.2.2.

The underlying technical feature of all the IBLI programs that are operating in Kenya and Ethiopia is that they are designed to protect livestock owners/pastoralists against the key risk of drought. All the IBLI products use satellite imagery based on the Normalized Difference Vegetative Index (NDVI) to monitor progressive drought impacts on forage availability/quality in pastoral areas of these countries in order to trigger timely payouts when forage availability is severely depleted and animals are in danger of starvation.

This report focuses on IBLI. Further details on these insurance types are included in Annex 2.

4.2.2 Key differences between micro-level IBLI and modified macro-level IBLI programs

There are some fundamental differences between implementing IBLI as (i) a voluntary commercial micro-level retail product sold to individual pastoralists, (ii) a conventional macro-level sovereign-risk disaster financing instrument purchased by national governments, (iii) as a modified meso-/macro-level IBLI product purchased by governments (and/or development partners) which is designed to protect the livelihoods of large numbers of pastoralists against drought. These are summarized in Figure 19 and in Table 20.

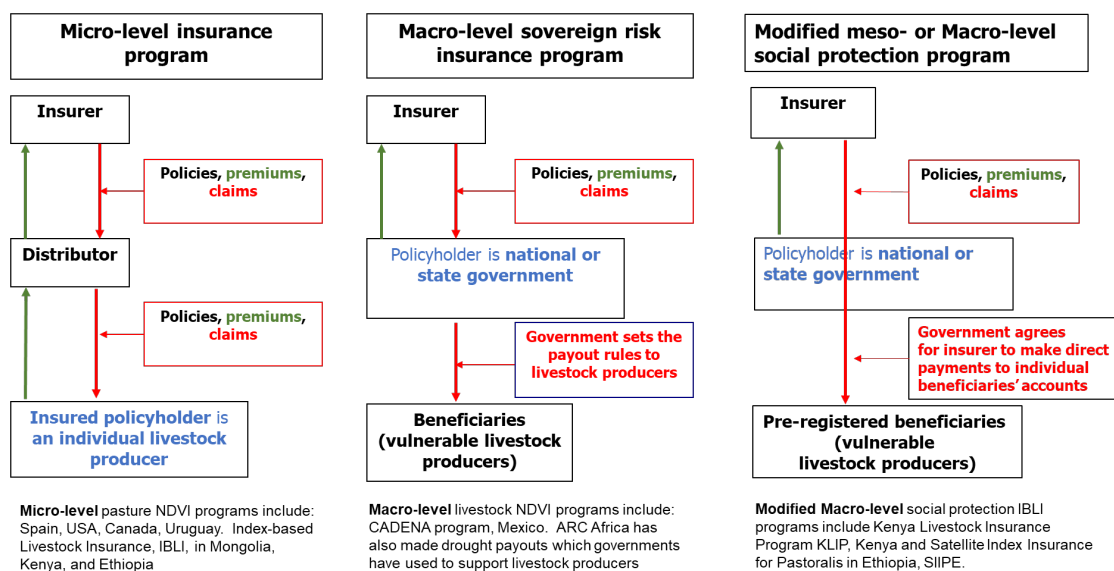
Under a voluntary micro-level IBLI program as implemented by private commercial insurers in Kenya and Ethiopia, individual policies are marketed to individual pastoralists who are responsible for the payment of premium and who are the insured policyholder. If a drought payout is triggered, the payment from the insurer is made directly to the insured pastoralist. Both the IBLI programs in Kenya and Ethiopia are examples of micro-level insurance programs (see left hand chart in Figure 18).

Under a macro-level sovereign risk insurance program, governments typically purchase a single policy and they or an appointed ministry are the insured policyholder. In the event the policy is triggered, the payout

is paid as a lump sum payment to government (the insured), which then can decide on how to utilize this payout on emergency relief and response and to decide who will benefit from the payouts. ARC is an example of a macro-level index insurance program that provides governments with timely payouts to respond to drought. In ARC's case each country prepares an ex-ante drought response plan for how payouts will be spent (see middle chart in Figure 18).

Kenya was the first country in Africa to experiment with a modified macro-level IBLI approach under which payouts are made directly to pre-registered vulnerable pastoralists (beneficiaries) rather than the payout going to government. In Kenya, KLIP represents a 'modified' macro-level livestock index insurance program. Here the Government of Kenya through the State Department of Livestock of the Ministry of Agriculture, Livestock and Fisheries purchases a single master policy on behalf of large numbers of pre-identified and targeted vulnerable pastoralists, each of whom receives protection for a fixed number of animals or TLUs. The key feature of the modified macro approach is that in the event of a drought payout being triggered in an insured unit (e.g. a sub-district) all the registered beneficiaries in the insured unit receive direct payouts from the insurance company to their own bank account or mobile money account. This greatly speeds up the receipt of a cash injection to beneficiaries. The SIPE program in Ethiopia is another example of a modified macro-level program, but in this case, it is referred to as modified meso-level cover (see right-hand chart in Figure 19).

Figure 19: Differences between micro-level, macro-level and modified macro-level livestock index insurance.



Source: Authors.

There are key differences in the operational and administration requirements and therefore the costs of implementing a voluntary micro-level IBLI scheme with individual pastoralists and a modified macro-level scheme such as KLIP or SIPE, which are detailed in Table 20. While the contract design and triggers may be identical for a micro-level and a meso-level IBLI program, a micro-level program can only be successfully implemented if the private insurance company and its private/public sector stakeholders establish an insurance distribution network in the pastoral regions of the country. The network or branch offices must be properly staffed and equipped in order to conduct IBLI awareness and sensitization programs; market and sell policies to individual pastoralists; collect premiums against the issuance of an individual policy to each insured; and, finally, to ensure that the pastoralist has a means of being contacted in the event of a payout and has their own bank account. Conversely under a modified macro-level program such as KLIP and SIPE with automatic registration of large numbers of targeted and selected beneficiaries and no need to collect premiums or to issue individual policies, the operational and administration costs are greatly reduced. As the next sections show, insurers in Kenya and Ethiopia have struggled to implement micro-level voluntary IBLI programs cost effectively over the past decade.

Table 20: Key similarities and differences between IBLI micro-level voluntary commercial and IBLI macro-level livelihoods protection programs.

	IBLI voluntary commercial retail insurance (micro-level)	IBLI livelihoods protection insurance (modified macro-level)
Product design and rating		
Index: Satellite NDVI (from MODIS)*	Same	Same
Contract design (triggers) and payouts (loss cost rates)	Same	Same
Sum insured	Same (but could increase for larger commercial herders according to the feed requirements of their herds).	Same (but as livelihoods protection based on minimum nutritional requirements of livestock).
Commercial premium (original gross premium) rates	Same underlying pure loss costs, But Commercial premium rates may need to be considerably higher to reflect much higher administrative and operating costs associated with voluntary sales to individual pastoralists (insured policyholders).	Same underlying pure loss costs, but potential to minimize administrative and operating loadings as automatic cover for large numbers beneficiaries and potential to achieve economies of scale in costs.
Payouts	Same assuming same sum insured and triggers adopted (direct to policyholder insured).	Same assuming same sum insured and triggers adopted (direct to beneficiary).
Target audience	More affluent small/medium and large pastoralists who can afford to pay either the full commercial premium rate or a part-subsidized premium rate.	Vulnerable pastoralists who depend largely on livestock herding for their livelihoods, but who cannot afford to pay commercial premium rates. These pastoralists should have a minimum herd size of 5 TLUs (or number to be agreed).
Compulsion of IBLI insurance	Purely voluntary decision by the individual pastoralist or group.	Automatic enrolment of selected pastoralist by project management/government entity
Policyholder (insured)	The individual pastoralist is the policyholder and insured as named in the policy certificate.	The insured policyholder is the government entity/ agency on behalf of the pre-selected pastoralists, who will be listed in the schedule (or annex) attaching to the policy issued to the government entity/agency.
Pre-conditions of insurability	Insured pastoralist household must: <ul style="list-style-type: none"> • be able to pay their share of premium • have a smartphone to receive IBLI SMS messaging • have a bank account (fixed or mobile money) into which payouts can be directly made 	Beneficiary pastoralist household must: <ul style="list-style-type: none"> • own a minimum of 5 TLUs and be a livestock herder • have a smartphone to receive IBLI SMS messaging • have a bank account (fixed or mobile money) into which payouts can be directly made.
IBLI insurance awareness creation and sensitization	Not essential if marketing and promotion and sales functions are correctly performed by the insurer or its appointed agents/distribution channels.	Essential as pastoral communities and their members must be made aware of the government livelihoods protection IBLI program and why some pastoralists are being identified as beneficiaries and will be automatically enrolled, while others will not be selected.
Targeting (and sales) and selection	Insurers will be responsible for their own marketing and promotion and sales programs including: <ul style="list-style-type: none"> • own sales agents • other distributors 	The government agency will need to work closely with country authorities, community and pastoral leaders to identify the selection criteria and the beneficiaries of the program in each insured unit.
Registration	All insured pastoralists must be electronically registered along with their livestock holding and their address, phone number and bank/mobile money account details and name of the insured unit in which their livestock are normally grazed and which they have selected to be their trigger insured unit. IBLI details must also be recorded including no. of insured TLUs, sum insured, premium rate for that insured unit and premium paid by the pastoralist.	All beneficiaries must be electronically registered along with their livestock holding and their address, phone number and bank/mobile money account details and name of the insured unit in which their livestock are normally grazed and which they have selected to be their trigger insured unit. IBLI details must also be recorded including no. of insured TLUs, sum insured, premium rate for that insured unit and premium paid by government.

	IBLI voluntary commercial retail insurance (micro-level)	IBLI livelihoods protection insurance (modified macro-level)
Premium payment and policy issuance	On the payment of their share of premium, each insured policyholder should receive a unique numbered certificate of insurance (local language), policy wording and schedule of cover (as necessary).	Beneficiaries do not pay any premium (at least in initial year(s)). A single master policy will be issued to the government entity that purchases cover. Each beneficiary must receive an IBLI certificate detailing the protection they are receiving (no. of TLUs, sum insured and maximum payouts per season and insured unit).
End of season notification (and settlement of payouts)	Ideally SMS texting will be used to advise every insured member during the coverage period if drought conditions are developing in their insured unit and at the end of the cover period whether a drought payout has been triggered or not and the payout is due. Electronic money transfers should be carefully tracked to each insured's bank or mobile money account.	Ideally SMS texting will be used to advise every insured member during the coverage period if drought conditions are developing in their insured unit and at the end of the cover period whether a drought payout has been triggered or not and the payout is due. Electronic money transfers should be carefully tracked to each insured's bank or mobile money account.
Government support (premium subsidies)	Currently none under IBLI micro-level programs in Kenya and Ethiopia.	Kenya: 100% subsidized and financed by the Government of Kenya (out of the State Department of Livestock, Ministry of Agriculture, Livestock and Fisheries budget). Ethiopia: WFP finances 100%, but pastoralists are expected to contribute towards premium costs through Insurance for Assets (in-kind labour on productive safety net public works programs).
Costs of implementing program to insurers	The administration and operating requirements and expenses for insurers to market micro-level IBLI policies to individual pastoralists in the ASAL regions are extremely high including awareness creation and policy promotion/sales, policy issuance, premium collection and claims payouts (see Table 21 for further details).	The administration and operating requirements and expenses for insurers to underwrite a single modified macro-level IBLI policy with government are much lower than for a micro-level IBLI program. Main costs include registering pastoralists (beneficiaries) and insurance awareness creation.
IGAD country experience to date	IBLI: ASAL countries of Kenya since 2010/11 IBLI: Borena and Oromia Region of Ethiopia since 2012/13	KLIP: ASAL counties of Kenya since 2015/16 SIPE: Somali Region of Ethiopia since 2017/18

* Moderate Resolution Imaging Spectroradiometer.

Source: Authors.

4.2.3 Micro-level IBLI: Experience from Kenya and Ethiopia

As the first of its kind in Africa, the micro-level IBLI product for pastoralists was designed by researchers from ILRI, Cornell University and University of California, Davis with financial support from UK Aid Direct and Australian Aid. The initial IBLI product combined cumulative seasonal drought in pasture and grazing land as measured by satellite imagery²⁴ with historical livestock mortality losses for the period 2000 to 2009.²⁵ This data was used to design an expected or predicted livestock mortality index which was offered as a micro-level or retail cover to nomadic pastoralists in selected districts of northern Kenya. The policy provided full market-value animal replacement cover for each species (camels, cattle, sheep and goats) to enable the insured pastoralists to re-stock their herds after the drought event. The policy covered both the long rains long dry season from March to September and the short rains short dry season from October to February.

²⁴ Since April 2000, the National Aeronautical and Space Administration (NASA) has produced 16-day composite NDVI images from the Moderate Resolution Imaging Spectroradiometer (MODIS), which flies onboard the satellites Aqua and Terra of NASA. The NDVI data are available at a resolution of 250 m x 250 m.

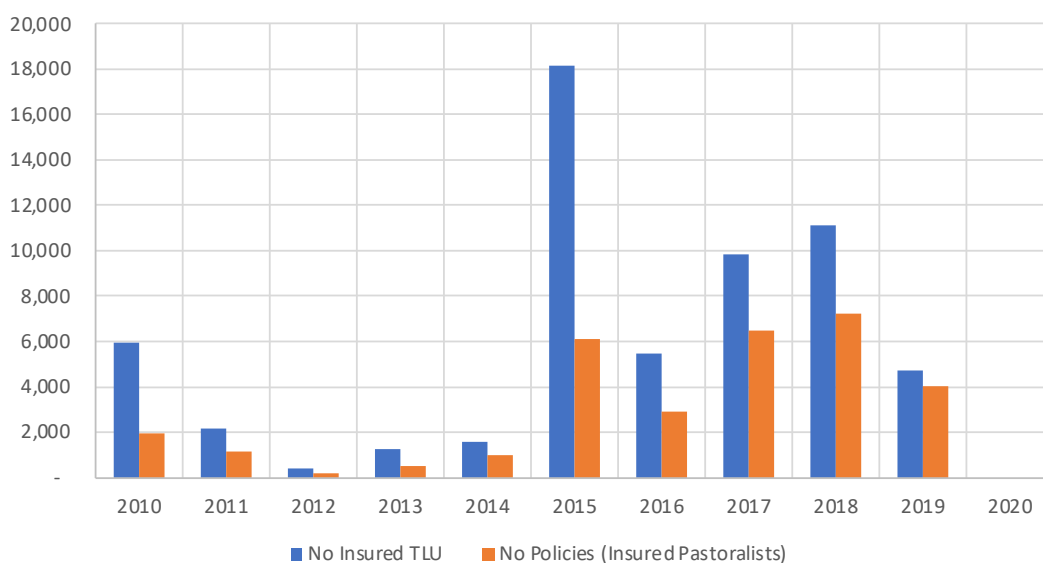
²⁵ Livestock mortality data collected under the Kenya Arid Lands Resource Management Project and USAID's Pastoral Risk Management Project at divisional (sub-district) level on a monthly basis between 2000 and 2006.

The micro-level commercial IBLI product was sold first in Kenya and then in Ethiopia to individual pastoralists. IBLI was launched by UAP Insurance²⁶ in Marsabit County northern Kenya in 2010. Subsequently, on the back of the successful launch of IBLI in Kenya, ILRI assisted Oromia Insurance Company to launch IBLI in Borena zone of Oromia Region in 2012.

Since 2015, product design of the IBLI cover has evolved from an ‘asset replacement’ to an ‘asset protection’ cover. The original product was designed to provide payouts to pastoralists when the underlying index indicated a certain mortality rate among livestock located in a designated geographical area (e.g. a sub-county or district).²⁷ Payouts were meant to enable pastoralists to replace their dead animals by purchasing new animals in local livestock markets. The redesigned asset protection product provides payouts already during the season, thus enabling pastoralists to purchase fodder for their animals and thus keep core breeding stock alive, which tends to be much more cost effective.²⁸ Further details on IBLI micro-level product design are provided in **Annex 3**.

Both the IBLI program in Kenya and the one in Ethiopia have struggled to achieve significant scale-up. The voluntary micro-level retail IBLI programs in the ASAL regions of northern Kenya and in the Borena Zone in Ethiopia’s Oromia Region have now been operating for 10 years and 8 years, respectively. In Kenya, demand for voluntary micro-level IBLI increased between 2015 to 2018 following the entry of Takaful Insurance of Africa Ltd (TIA) Ltd providing Sharia-compliant IBLI policies, with sales peaking at 7,252 policies in 2018²⁹ (Figure 20). However, in the past two years IBLI sales in Kenya have declined dramatically due to Takaful’s decision to cut its sales staff and to reduce the overhead costs of promoting IBLI cover in the ASAL region.³⁰ In Ethiopia, voluntary micro-level IBLI sales peaked at 4,963 policies in 2017/18 (Figure 21), since when the sales have levelled off. To a major extent, the increased demand for IBLI in Ethiopia over these years was a response by pastoralists to the severe droughts of 2016 and 2017 and the demonstration effect of IBLI payouts in drought affected regions.

Figure 20: Demand and uptake of micro-level IBLI by pastoralists (no. policies and no. insured TLU) in Kenya.



Source: ILRI and Takaful Insurance of Africa.

²⁶ UAP was acquired in 2015 by Old Mutual Insurance Company, South Africa and is now known as UAP Old Mutual.

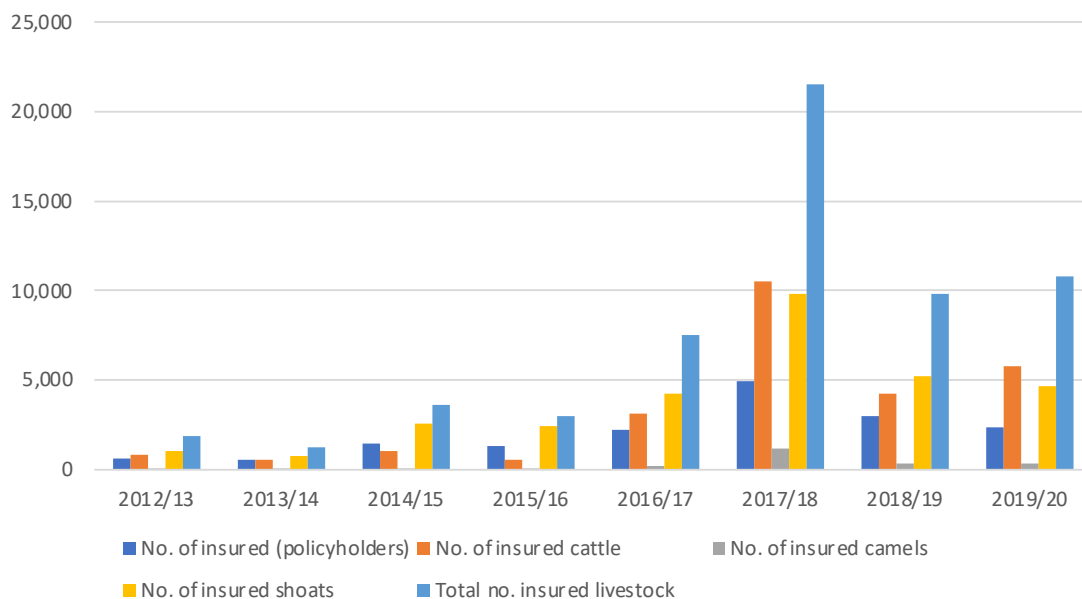
²⁷ In insurance terminology this geographical area is commonly known as the insured unit or alternatively as the unit area of insurance.

²⁸ An additional advantage of switching from a predicted livestock mortality index/asset replacement cover to a forage depletion index/asset protection cover is that basis risk is considerably reduced. ILRI research work in Marsabit between 2010 and 2012 showed that IBLI-insured households faced substantial basis risk, namely that IBLI covered only 62–77% of the herd mortality risk that households face. The remaining basis risk was explained by the predicted mortality index error and in any one unit area of insurance, between-household variation in livestock loss rates (Jensen, Barrett and Mude 2015).

²⁹ During the ongoing second phase of IBLI, it was financed with 3.9 million pound sterling (GBP) (USD 6.1 million) over the period 2012–2016. Contributions were made by the UK Department for International Development (DFID), Australian Aid (AusAid) and the EU. The goal was to cover 15,000 households by 2016. This has proven to be difficult given the low outreach figures. Funding is provided both for IBLI program design and operations, including subsidies on the premiums which amount to about 40% of full commercial premium cost, subsidies on the operating costs (marketing, promotion sales, education and training) and on monitoring and impact evaluations studies.

³⁰ In Kenya, the central problem is that management changes in takaful mean that post-2018 IBLI was no longer considered to be a core micro-insurance product, not least because it was costing too much to implement and the company reduced its promotional and sales team from >50 staff to almost zero by 2019/20. So the issue seems to be not falling demand by pastoralists per se, but Takaful’s inability to make this business profitable and ceasing to promote and market the cover in the ASALs.

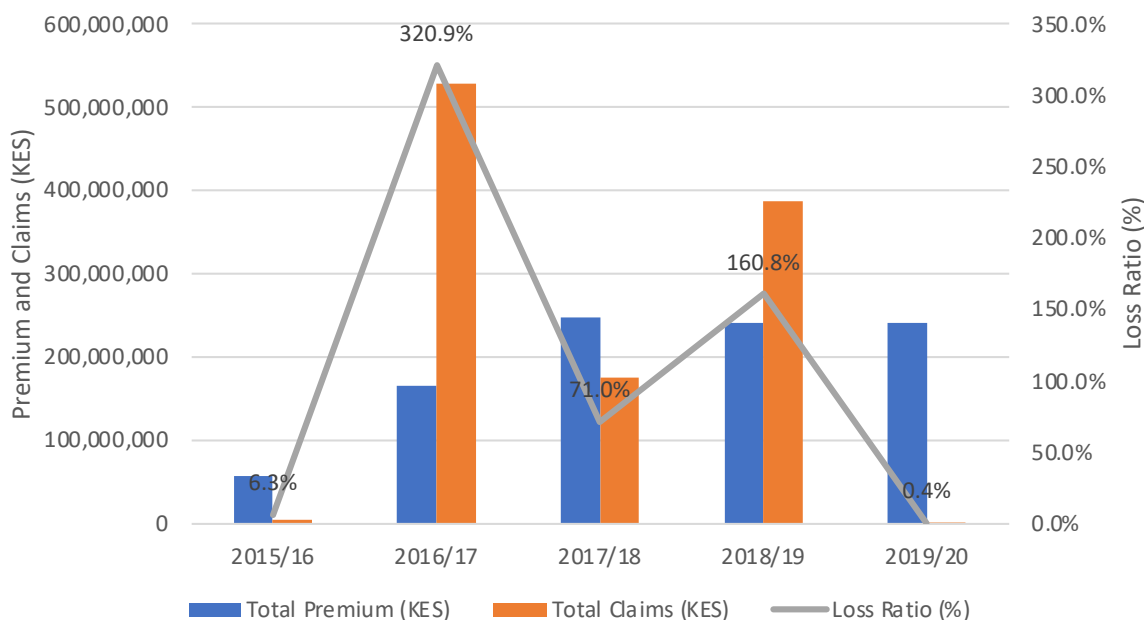
Figure 21: Demand and uptake of micro-level IBLI by pastoralists (no. policies and no. insured TLU) in Ethiopia.



Source: Oromia Insurance Company (Ethiopia) – data provided to authors.

The underwriting results of the voluntary IBLI programs in both Kenya and Ethiopia have been poor over time and insurers and their reinsurers have lost money. In Kenya, between 2015 and 2019 Takaful Insurance of Africa experienced underwriting losses in four out of the five years, with an overall loss ratio³¹ of 176% and as high as 615% in 2016 (Figure 22). In Ethiopia, the overall loss ratio at the end of 2019 was 117% and in three out of the past five years, the loss ratio was higher than 100% in Ethiopia. In both countries, the high drought losses between 2016 and 2019 are related to the El Niño and La Nia phenomena in these years (Figure 23).

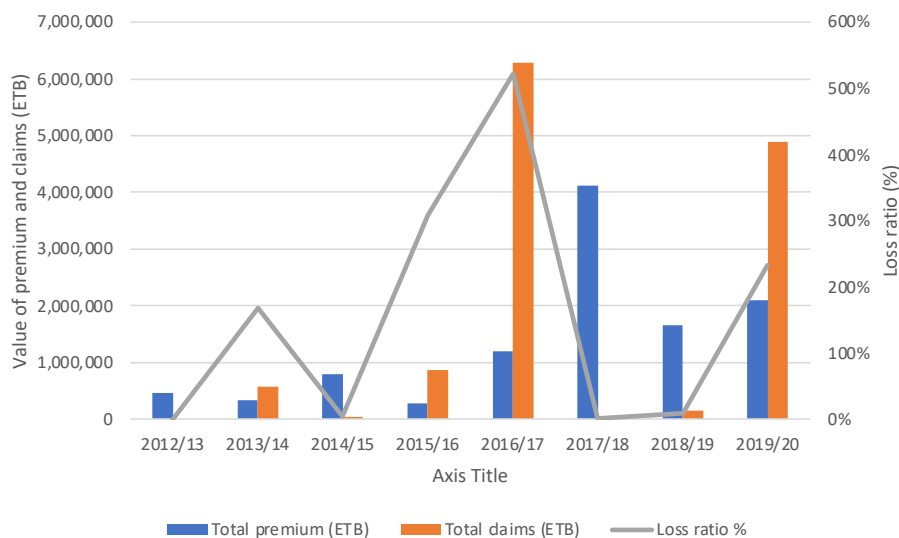
Figure 22: Underwriting results (2015/2016 to 2019/2020) (KES) for voluntary IBLI by pastoralists (premium, claims and loss ratios) in Kenya.



Source: Takaful Insurance of Africa.

³¹The overall loss ratios presented in this section represent the ‘long-term average loss ratio’, which is equivalent to the sum of the claims for all years divided by the sum of the premiums for the corresponding years. Underwriters also refer to the ‘average loss ratio’, which is the average of the annual loss ratios for all years.

Figure 23: Underwriting results for voluntary IBLI by pastoralists in Ethiopia.



Source: Oromia Insurance Company.

Researchers have evidenced the significant benefits of the micro-level IBLI programs on drought resilience building and livelihoods protection at the individual pastoral household level in Kenya and Ethiopia. The IBLI programs in both countries have been subject to repeated rigorous scientific evaluations. These are described in more detail in **Annex 4**. Some identified impacts include the following.

- In Kenya, the IBLI program helps protect insured pastoralists from forced asset depletion (livestock sales) and/or reduced household consumption (Janzen and Carter 2013; Janzen and Carter 2019) poor households with inadequate access to financial markets can sell assets to smooth consumption and, or reduce consumption to protect assets. Both coping strategies can be economically costly and contribute to the transmission of poverty, yet limited evidence exists regarding the effectiveness of insurance to mitigate these costs in risk-prone developing economies. Utilizing data from an RCT in rural Kenya, this paper estimates that on average an innovative microinsurance scheme reduces both forms of costly coping. Threshold econometrics grounded in theory reveal a more complex pattern: (i).
- In Kenya, IBLI sharply improves herd survival rates by considerably reducing the risk of catastrophic losses and contributes to increased milk productivity of livestock and income, greater household income per adult equivalent and improvements in children's mid-upper arm circumference (Jensen, Barrett and Mude 2015).
- In Ethiopia, during the severe 2016/17 drought, 93% of surveyed pastoralist IBLI policyholders reported that in response to anticipated drought insurance payouts they increased purchases of livestock inputs (forage/fodder and veterinary services). They also adjusted their animal migrations and invested more in non-livestock activities. When IBLI payouts were received, 80% of respondents reported spending these on livestock inputs of fodder, water and veterinary services in order to keep their animals alive, as well as using some of the payouts for food, education and human health services (Taye et al. 2019).

4.2.4 Modified macro-level IBLI: Experience from Kenya and Ethiopia

Kenya Livestock Insurance Programme. In response to the huge losses and damages that occurred during the 2008–11 droughts in Kenya, the Government of Kenya launched KLIP in the short rains season 2015/16. KLIP is Africa's first example of a modified macro-level IBLI program. It is purchased by the Government of Kenya as part of its drought resilience building and livelihoods protection programs for the ASALs of northern Kenya (see Section 4.2.2 and Figure 18 for definitions of modified macro-level IBLI). KLIP uses the same IBLI 'asset protection' product to enable pastoralists to keep their core breeding stock alive during severe droughts. The key difference to the micro-level product is that pastoralists do not purchase modified macro-level IBLI themselves but it is the Government of Kenya (in conjunction with the county governments and local community leaders) that selects the most vulnerable pastoralists who will participate

in the program and the Government of Kenya (the policyholder) then pays the full premium on their behalf (currently for 5 TLU). In this way, IBLI becomes a drought resilience building/livelihoods protection tool – the government pays for insurance on behalf of vulnerable people who cannot afford it and thus does not need to intervene to support them in the case of a severe drought. The key benefit of the KLIP modified macro-level approach is that in the event of the policy being triggered in an insured unit, all the registered beneficiaries in that insured unit receive payouts directly from the insurer to their own mobile money or bank accounts. This greatly speeds up the pastoralist's ability to convert the payouts into life-saving fodder and feed supplements, water and veterinary drugs for their animals. This is in contrast to a conventional macro-level disaster risk financing program (e.g. offered by ARC), where it takes many weeks or even months for the lump sum insurance payouts received by the government to reach the drought-affected rural households. The modified macro-level approach also avoids the costly challenges of having to sell micro-level IBLI insurance in the ASALs, where most insurers have no distribution networks. The Government of Kenya issues an annual tender for KLIP and interested insurers bid for the business on price. At its inception in 2015/16, KLIP was insured by a pool of seven co-insurance companies led by APA Insurance and with reinsurance support from Swiss Re.

Satellite Index Insurance for Pastoralists in Ethiopia. SIPE is an initiative of WFP and the regional government of Somali Region in Ethiopia, an important and drought-exposed pastoral region. SIPE is very similar to KLIP in that it is also a modified macro-level program where the regional government purchases IBLI policies on behalf of vulnerable pastoralists. SIPE is closely aligned to the Productive Safety Net Program, which provides conditional food and cash transfers to poor households throughout Ethiopia, including a high proportion of the pastoral population in Somali Region. SIPE beneficiaries are selected on the basis that they have 5–11 TLUs and it also insures 5 TLUs per beneficiary. Currently WFP finances the costs of premiums in full, but it is examining the introduction of an insurance-for-assets approach whereby pastoralists provide their labour to cover part or all of their premium costs. The SIPE program is insured by a co-insurance pool of four companies: the Ethiopian Insurance Corporation, Africa Insurance Company, Oromia Insurance Company and Nyala Insurance Share Company; SCOR Zurich is the lead reinsurer for SIPE.

Both KLIP and SIPE have been designed as public-private partnerships. In both programs, public and private sector actors have dedicated roles and responsibilities. The following outlines these using the example of KLIP (see Figure 23).

Key public sector operational support roles include the following.

- Setting an enabling legal and regulatory environment. In the planning of KLIP, approval was granted by the Kenyan Insurance Regulatory Authority, for the modified macro-level approach and for a co-insurance pool to tender for KLIP.
- Establishment in the Kenyan State Department of Livestock, Ministry of Agriculture, Livestock and Fisheries of a project management unit to coordinate the design and implementation of KLIP.
- Targeting and enrolment of KLIP beneficiaries. The project management unit has liaised closely with the devolved county governments in the ASAL region to target and register vulnerable pastoralists as beneficiaries of KLIP: key selection criteria included pastoralism as the main livelihood, ownership of a minimum of 5 TLUs and that pastoralists should not be a beneficiary of another safety net program.
- Premium financing. From the outset of KLIP, the Government of Kenya provided a firm commitment to fund in full the premiums of the selected vulnerable pastoralists. The government also provides limited budgetary support for awareness creation and training for pastoralists.
- The Kenyan Insurance Regulatory Authority is involved in sensitization and insurance literacy campaigns.

The private sector insurers and their reinsurers have been responsible for:

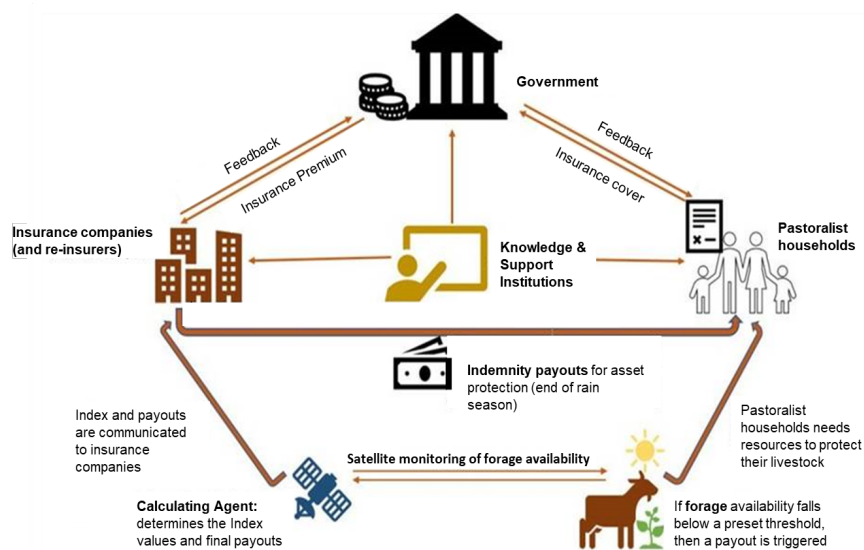
- tendering for the KLIP contract originally on a one-year basis (but starting in 2020 on a three-year basis), either singly or as a co-insurance pool;
- agreeing terms and conditions of KLIP coverage with the Kenyan State Department of Livestock, Ministry of Agriculture, Livestock and Fisheries;

- pricing the KLIP product and negotiating terms and conditions with international reinsurers to ensure KLIP is fully reinsured up to its maximum liability;³²
- maintaining a database of KLIP beneficiaries in each county and insured unit including their bank account and/or mobile money account details;
- managing claims payouts when triggered to each beneficiary's bank/mobile money account; here, Equity Bank and Safaricom have provided major support to KLIP by ensuring that the selected KLIP pastoralists have a bank account or mobile money account;
- establishing necessary staff, systems and procedures in each insured county to administer KLIP implementation, including support for awareness creation activities.

ILRI has provided major technical support to the implementation of KLIP in the following areas:

- Capacity building and training for the State Department of Livestock programme management unit and for private sector insurers.
- Design of KLIP awareness and educational materials and provision of trainer of trainer courses for State Department of Livestock and county-level department of livestock extension staff in order to provide training for pastoralists.
- For the past five years, with the agreement of government and the appointed insurers and their reinsurers, ILRI has acted as the official independent NDVI calculation agent for KLIP, responsible for monitoring and processing the satellite index values on a monthly basis and, at the end of season, for determining whether the policy has been triggered in any of the insured units and countries, which will result in a claims payout (Figure 24).

Figure 24: KLIP public-private partnership organizational and operating structure.



Source: Fava et al. 2021.

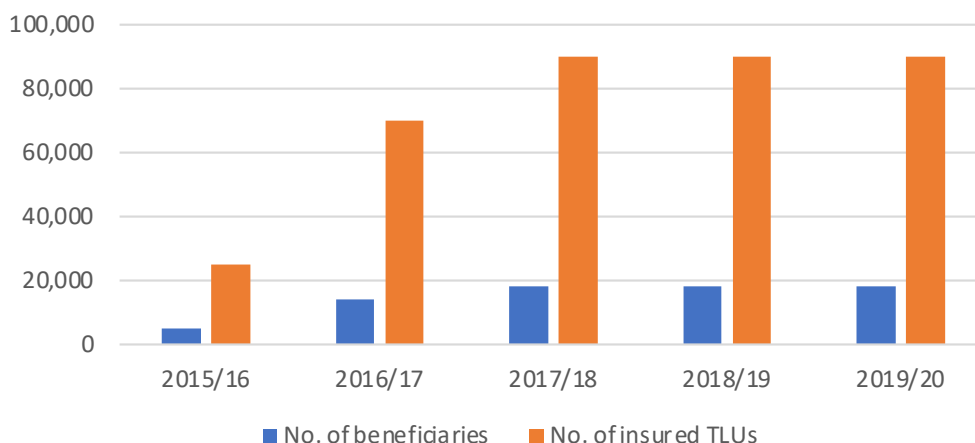
KLIP and SIPE have been active for five and three years, respectively, and have scaled up significantly during this time.

In Kenya, KLIP's coverage scaled up from 5,012 vulnerable pastoralists in two ASAL counties in year 1 (2015/16) to 18,012 pastoralists and their families (about 120,000 people in total) in eight counties by year 3 (2017/18). With an estimated 700,000 pastoral households in Kenya owning 28.8 million TLUs, the program is currently reaching 2.7% of households and protecting 0.3% of the national herd (Figure 25). In Ethiopia, SIPE was launched in three woredas of Somali Region in the long rains/Gu season in 2018, with 5,001 benefitting pastoralists, and has expanded to seven woredas and 15,504 beneficiary households in 2020 (Figure 26). In 2021, WFP plans to scale the program up to 11 woredas and 30,000 benefitting pastoralists and 150,000 insured TLU.³³

³²At the 2020/21 renewal an APA-Insurance-led co-insurance pool has been awarded the KLIP contract for a three-year period. The co-insurers retain 20% of risk and then cede 80% under a quota share reinsurance program led by Swiss Re (40% share); African Reinsurance Company (30% share) and for the first time, ARC (10% share).

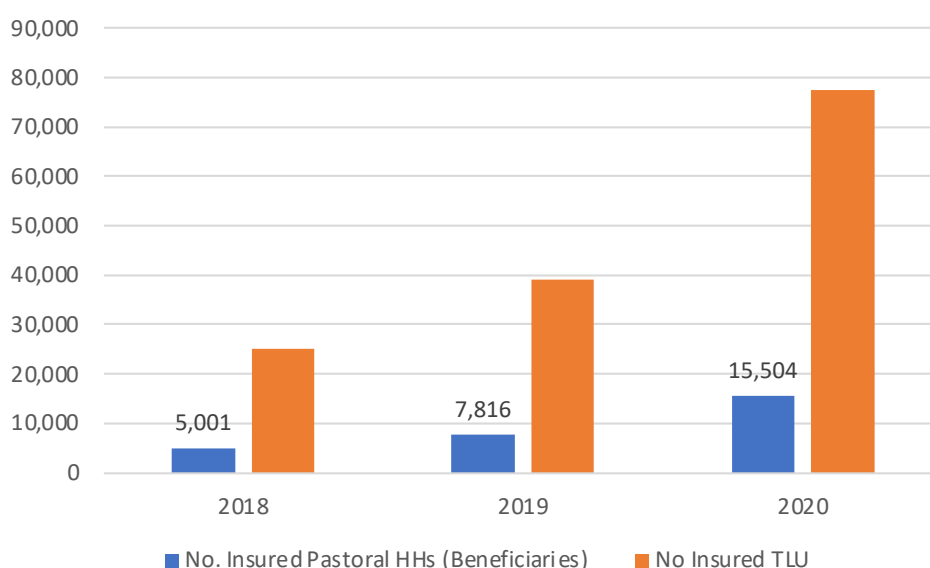
³³As per interviews with WFP staff.

Figure 25: Scale-up of automatic KLIP in Kenya.



Source: Fava et al. 2021.

Figure 26: Scale-up of automatic SIPE in Ethiopia.

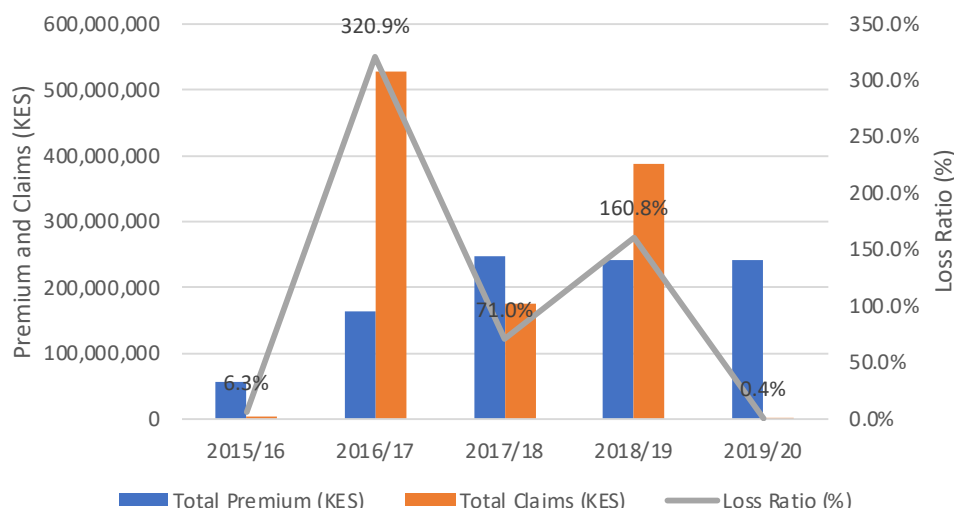


Source: Data received from WFP.

Since its inception, KLIP has made significant payouts to pastoralists, and SIPE, smaller ones. For KLIP, the Government of Kenya has paid 949 million Kenyan shillings (KES) (USD 9.5 million) in premiums on behalf of more than 73,000 vulnerable pastoralists, and they in turn have received total drought payouts amounting to KES 1.1 billion (USD 10.1 million) for an overall long-term average loss ratio of 115%. The year 2016–17 was a severe drought year with back-to-back payouts in both the 2016/17 short rains and in the 2017 long rains seasons, with a loss ratio of 321%.³⁴ To compound pastoralists' problems, the next short rains season in 2017/18 was also a severe drought, and grazing reserves were further depleted, leading to underwriters paying out an additional KES 175 million. Although rains were better in the long rains season of 2018 and there were no payouts, La Nina-related conditions applied to both the short rainy season 2018/19 and the long rains 2019, resulting in further claims payouts of KES 387 million (loss ratio 161%). Finally, rains and grazing conditions were above average in 2019/20 and there were only tiny payouts on KLIP (Figure 27). For SIPE in the first year, 2018, the program was claims-free. In 2019, it incurred moderate drought claims in the Deyr season (March to June) in two of the three woredas, with a corresponding loss ratio of 81%, while 2020 had until October, when data for this report was collected, remained claims-free. The SIPE overall loss ratio at the time of writing stands at 23% after nearly three years of operation (Figure 28).

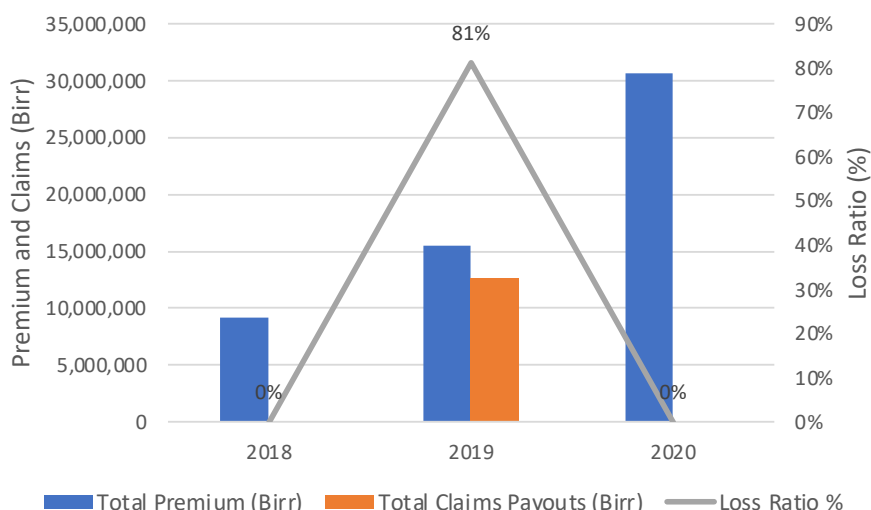
³⁴A loss ratio of 321% implies that for every KES 1.0 of premium paid by government, local insurers and their international reinsurers paid out KES 3.21 in drought claims.

Figure 27: Underwriting results of KLIP in Kenya (2015-2016 to 2019/2020).



Source: Fava et al. 2021.

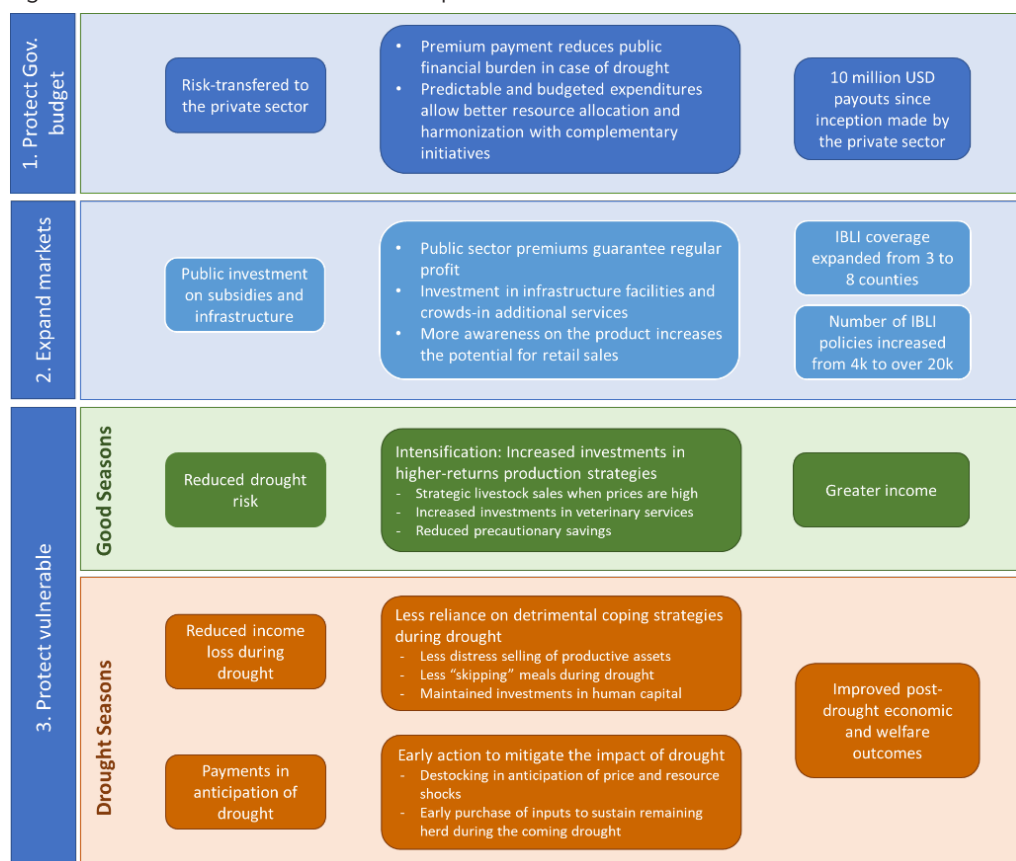
Figure 28: Underwriting results of SIPE in Ethiopia (2018 to 2020).



Source: Data received from WFP.

- Different evaluations of the impact of the KLIP and the SIPE programs have been conducted, showing the major value these programs have had for pastoralists.** For KLIP, a recent review study (Fava et al. 2021) summarizes observed and potential benefits and impacts (Figure 29). The detailed impact analysis findings of KLIP and SIPE can be found in Annex 4. Key findings include the following.
- There is some evidence showing that KLIP is supporting the development of a micro-level IBLI market in target areas. For example, KLIP is contributing significantly to insurance awareness-creation among pastoralists and helping pastoralists get used to insurance-based payouts for fodder purchases (Chelang’a et al. 2018).
- A 2018 GIZ impact evaluation survey found that KLIP is helping pastoralists improve their ability to cope with livestock and household needs in times of severe drought. Self-reported satisfaction with the program was high and the vast majority of beneficiaries use part of the payouts to fund expenses for their livestock (maintenance, restocking and production equipment) but money was also spent on household needs. Qualitative evidence also found that beneficiaries had shared payouts to support neighbours and the broader community (Government of Kenya 2018b).
- For SIPE, while it is still too early to assess its impact given that there has only been one moderate drought insurance payout, a 2019 evaluation found that there were positive impacts of the program at the pastoralist community level and that awareness of insurance and SIPE was relatively high. However, significant challenges were also identified, including low awareness of basis risk and a low usage of bank accounts that were opened for beneficiaries (C4ED 2019).

Figure 29: Overview of KLIP benefits and impacts.



Source: Fava et al. 2021.

4.3 IBLI: Key challenges and lessons learned

4.3.1 Micro-level voluntary IBLI schemes

Challenge 1: Low micro-level IBLI demand and under-insurance

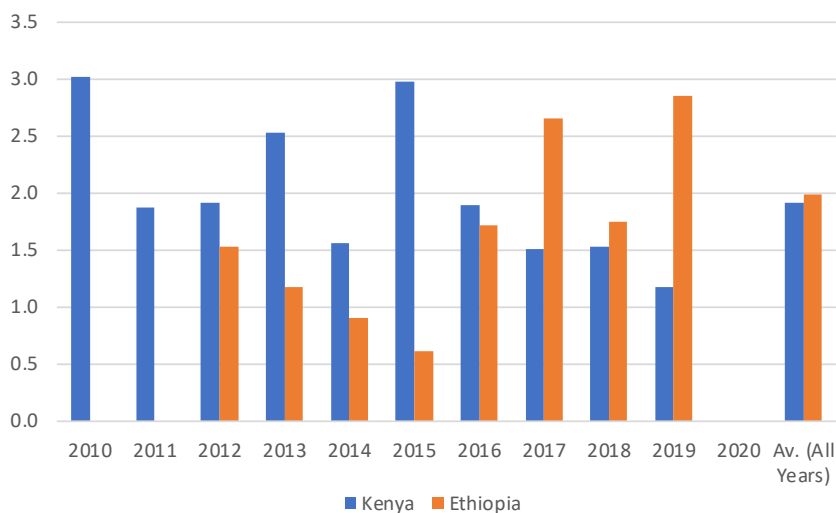
In spite of huge investment in awareness and sensitization programs carried out by ILRI, local NGOs, insurers and their agents, it has been difficult to achieve consistent scale-up and financial sustainability on the voluntary micro-level IBLI programs in both Kenya and Ethiopia. Where pastoralists purchase IBLI cover, they tend to insure only a small number of their livestock, and drop-out rates in subsequent years have been very high. For IBLI to be an effective drought livelihoods protection instrument, pastoralists need to purchase cover for the bulk of their productive livestock, including female animals, young stock and reproductive male animals. In Kenya, an average of only 1.9 TLUs per policyholder and in Ethiopia an average of 2.0 TLUs per policyholder have been purchased over the last decade (Figure 30).³⁵ Levels of financial literacy are low in the pastoral regions of Kenya and Ethiopia and it takes time to create awareness among pastoralists about the benefits of IBLI and to gain their trust in insurance. At the same time, many pastoralists are poor, and for many of them the costs of IBLI insurance are prohibitively high, meaning they can only afford to purchase cover for a handful of animals.³⁶ Another factor identified by IBLI insurers in both Kenya and in Ethiopia is that many pastoralists only purchase voluntary IBLI cover for a few head of animals (usually low-value sheep and goats which carry much lower premium costs than high-value cattle and camels) to 'test' if the cover will benefit them and pay out in times of drought and forage scarcity.

³⁵Uptake data for Ethiopia provided by Oromia Insurance Company and for Kenya by ILRI.

³⁶Average actuarially fair premium rates in Kenya from 2010 to 2015 asset protection cover were about 6.5% -7.5% and the average premium payment was about USD 15 per insured TLU. In Ethiopia the eight-year average premium rate has been 9.7% with average premium payment of USD 9 per TLU

In Kenya, ILRI research shows that district-level aggregate demand appears highly price elastic with potentially limited demand for contracts with commercially viable premium loadings.³⁷ Because willingness to pay is especially price sensitive among the most vulnerable pastoralists (i.e. those not currently caught in a poverty trap but on the verge of falling into one) for whom the product is potentially most beneficial, subsidization of asset insurance as a safety net intervention may prove worthwhile. Willingness to pay among vulnerable groups who most need insurance is, on average, lower than commercially viable rates. Subsidization of IBLI premiums appears to offer more cost-effective poverty reduction than direct transfers to the poor.

Figure 30: Micro-level IBLI Kenya and Ethiopia: average no. of TLUs insured per policyholder.



Sources: Data received from ILRI (Kenya) and Oromia Insurance Company (Ethiopia).

Demand for IBLI in both Kenya and Ethiopia has also suffered from a substantial rate of disadoption, namely the high rate of pastoralists who purchase IBLI insurance in year 1, but who decline to renew the cover again in subsequent years. While some disadoption is not surprising as households experiment with the product, especially if they do not receive drought payouts early on that build their trust in the insurer (Jensen, Barrett and Mude 2015), IBLI has experienced very high diasadoption rates. For example, in Ethiopia, less than 10% of pastoralists who purchased the IBLI cover in 2012/13 went on to renew their covers in 2013–14. According to ILRI Ethiopia and Oromia Insurance Company, the main reason for the very low renewal rates was due to the good weather that was experienced over the first two years of the program. The policy had not been triggered in any woreda over this period: in the absence of any payouts pastoralists did not have any proof that the policy was worth purchasing and many were therefore reluctant to renew cover (WFP 2014). In Kenya, one leading underwriter interviewed under this current study noted that disadoption rates may be as high as 50% or higher and this significantly increases the operational costs for IBLI insurers as they have to start from fresh each season in seeking out interested pastoralists and in providing them with expensive IBLI awareness and education and in setting up premium and claims and policy issuance systems and procedures.

Challenge 2: Basis risk

The basis risk faced by IBLI insured households can be substantial, this applying particularly in Kenya and Ethiopia to the predicted livestock mortality IBLI cover which was implemented between 2010/11 and 2014/15. Jensen et al (2015) note that in Marsabit County, IBLI covers 62–77% of the herd mortality risk that households face. The remaining basis risk is partially due to index error, or differences between predicted and area-average livestock mortality rates. According to the same authors, a much larger portion of basis risk arises from between-household variation in

³⁷In Kenya, Chantarat et al. (2014) report that aggregate demand for the IBLI product by pastoralists is very price elastic and that a small reduction in premium (e.g. through subsidization) can potentially induce a large increase in the demand for IBLI insurance. They find that if the 'actuarially fair premium' is loaded by 20%, this results in a reduction in the quantity of insurance demanded by 55%, and an additional 20% premium loading results in a further 26% reduction in demand. The apparent price elasticity of demand in these locations implies that a small premium reduction (e.g. through subsidization) can potentially induce large increases in quantity demanded: for example a decrease in premium loading from 40% to 20% could potentially induce more than a doubling of aggregate demand.

livestock loss rates (Jensen et al 2015). Spatial basis risk was also experienced on the IBLI Ethiopia program in early years, where some insurance units were initially too large such that severe drought and pasture loss and death of animals was experienced in part of the insured unit but because rainfall and grazing conditions were generally better throughout the rest of the insured unit the policy did not trigger payouts. The solution was to redraw the insured units into smaller geographical areas to reduce the spatial basis risk (WFP 2014).

With the switch in 2015/16 from a predicted mortality index for asset replacement to a forage availability index for asset protection, the issue of basis risk has been reduced because NDVI is a well-established indicator of vegetation condition. However, while there is extensive scientific literature about the NDVI relationship with green biomass on rangelands and sufficient anecdotal evidences that KLIP payouts are consistent with major drought events, no systematic evaluation of the IBLI product basis risk has been carried out (Fava and Vrieling 2021).

Basis risk for the current IBLI products may arise where the rangelands are composed of mixed agriculture and pastures. Annual or permanent crops present a different NDVI seasonal profile from rangelands and, when crops cover a large fraction of the insured unit total area, it becomes very difficult to discriminate crops and rangelands and the NDVI could be possibly affected by both crop and pasture vegetation. This makes the IBLI product possibly less accurate in determining forage deficit. Therefore, during feasibility analyses for IBLI, these areas are generally excluded from IBLI potential coverage.

Challenge 3: Unsustainably high administration and operating costs

Over the past decade, development partners have heavily subsidized the field operational costs of the voluntary IBLI programs in Kenya and Ethiopia to keep the commercial costs of premiums at a level which is affordable by the pastoral households. Pastoralists have therefore paid an 'actuarially fair premium rate' (Carter 2013; Carter et al. 2018), which is equivalent to the calculated pure loss cost rate (or average annual historical claims payouts that would have been made to pastoralists) amounting to about 60% of the full commercial premium rate. The remaining 40% of the commercial premium to cover data risk and uncertainty, business acquisition and operational expenses and reinsurance costs has been paid for by development partners.

IBLI underwriters in both Kenya and Ethiopia face high administration and operating costs in the remote semi-arid rangeland areas because there are few existing financial service delivery systems to reach pastoralists and both programs have operated at a financial loss over time. The unit costs of voluntary IBLI sales are extremely high for IBLI village-level insurance promoters, who act as commission agents and whose tasking includes community-level and individual household IBLI awareness creation and education, marketing and sales functions involving mobile-app-based registration of the pastoralist and their insured animals, estimation of the sum insured and due premium, premium collection and policy certificate issuance, and ensuring that the pastoralist has either a bank account or mobile phone to which direct payouts can be made. According to one leading voluntary micro-level IBLI underwriter in Kenya,³⁸ for every USD 1 collected in premiums, it costs the insurer an average of USD 3 to administer the policy. The former underwriter noted it was accepted that IBLI was a loss-leader in the short to medium term, but that it would hopefully give his company market entry to other and less costly classes of takaful insurance (e.g. health, life). Reference to Table 21 shows that in Kenya between 2015 and 2019, for every KES 1.0 of premium collected by Takaful Insurance of Africa, it cost the company KES 1.29 in operating expenses and, with the addition of the very high claims (loss ratio 1.76 or 176%), the combined ratio was equivalent to 3.02, i.e. the business has been very unprofitable for Takaful Insurance of Africa and this is the major reason the company withdrew from the micro-level IBLI market in 2020. In Ethiopia the IBLI underwriter at Oromia Insurance Company provided actual administrative and operating expense data for the nine years of micro-level IBLI implementation showing that total expenses are equivalent to about 1.1 Ethiopian birr (ETB) for every ETB 1.0 in collected premiums or, in other words, this program is also not able to generate adequate scale to cover its administrative and

³⁸Telephone communication with former Chief Executive Officer, Takaful Insurance of Africa.

operating expenses. Furthermore, over this period claims have also been high, as shown by the long-term loss ratio of 117%, and the combined ratio (paid claims plus administrative and operating overhead expenses divided by paid premium) has been correspondingly high at 229% or ETB 2.29 for every ETB 1.0 in collected premium (Table 21). In this case, Oromia Insurance Company advised that they continued to implement voluntary IBLI although this was unprofitable as part of their social corporate responsibilities.

Table 21: IBLI Ethiopia and Kenya: administrative and operational expenses analysis (2012–2020).

	Ethiopia (Oromia Insurance Company, 2012–2020) (Ethiopian birr (ETB))	Kenya (Takaful Insurance of Africa, 2015–2019) (Kenyan shilling (KES))
Total paid premium	10,975,947	50,787,429
Administrative and operating expenses		
Cooperative administration expenses	588,151	
VIPs' commissions (performance related)	1,237,793	
Oromia Insurance Company administration and operating costs	10,400,000	
Total administrative and operating expenses	12,225,944	64,003,331
Administrative and operating expenses (premium ratio)	1.11	1.26
Paid claims	12,855,632	89,524,449
Loss ratio	1.17	1.76
Combined ratio	2.29	3.02

Sources: Ethiopia: Oromia Insurance Company (2020); Kenya: Takaful Insurance of Africa (2020).

The commercial IBLI micro-level programs in Kenya and Ethiopia have experimented with alternative ways of distributing the product but have had no success so far.

Given the major difficulty that underwriters have experienced in selling micro-level IBLI policies to pastoralists, there have been plenty of attempts at reinventing channels of distribution. Generally, three different threads have been pursued:

- Linking insurance with other products sold to pastoralists.** Linkage has been the major breakthrough for increasing the coverage crop insurance products. For example, in Kenya, the national Comprehensive Crop Insurance scheme that launched in 2015 is sold in a bundle together with agricultural inputs (e.g. fertilizer) and has thus reached coverage of over 400,000 farmers (Kenya News Agency 2020). The key reason for the success of this approach has been that insurance premiums only cost a fraction of input costs, facilitating marketing to farmers. This is, however, also the key challenge for livestock products – as pastoralists seek fewer and less costly services than crop farmers, there is also less opportunity to bundle insurance with these. For example, in Kenya in 2018, the United States Agency for International Development (USAID) supported the attempt to sell policies through a fodder group in Isiolo. However, the ILRI team had no opportunity to follow up with the group on the results. In addition, IBLI underwriters both in Kenya and in Ethiopia have tried bundling IBLI sales with veterinary services. However, these tend to be too few in number and not costly enough to make product bundling with insurance attractive to pastoralist clients. Underwriters have also tried bundling IBLI with digital services provided to pastoralists. For example, in Kenya, Takaful Insurance of Africa partnered for one season with AfriScout, a smartphone app for pastoralists providing information about water and pasture availability in the rangelands.³⁹ However, the initiative does not seem to have succeeded in boosting IBLI sales.
- Bancassurance.** Another idea has been to bundle IBLI sales with credit extended to pastoralists. The idea is for agricultural lenders to sell insurance to borrowers alongside their loan and thus protect the credit portfolio against shocks from insured perils (bancassurance). For example, in Ethiopia, Oromia Insurance Company has tried distributing IBLI through microfinance institutions. However, the microfinance institutions charged relatively high commissions to cover their administrative fees, which in turn made IBLI unattractive to borrowing pastoralists.⁴⁰ This is in line with international experience elsewhere – the bancassurance concept, especially for index products, is a fine

³⁹AfriScout has been developed by Project Concern International. It has been piloted in Afar and Oromo regions, where up to 78% of pastoralists used the maps, with a consequent reduction in livestock mortality by 47% (Malabo Montpellier Panel 2020); see also <https://www.pciglobal.org/afriscout/>.

⁴⁰Telephone communication with senior IBLI underwriter at Oromia Insurance Company.

balance to strike for financial institutions (WBG 2017b). In Kenya, in 2013, ILRI and underwriters also partnered with CARE to provide insurance to pastoralists through group savings and loans groups. This approach, however, did not have a strong impact on sales, as (i) pastoralists perceived that taking out a loan to purchase insurance was too risky as they had to pay both interest and premiums without a guaranteed return and (ii) their credit needs were low – fewer than half of surveyed group savings and loans members had ever taken out a loan and only 3% had used credit to restock their herd (Gesare et al. 2015; Mburu, Johnson and Mude 2015).

- **Selling insurance to meso-level clients such as pastoralist producer groups.** A third attempt to increase IBLI sales has been to sell policies not to individual pastoralists but aggregate clients. In theory, this has the added benefit of reducing basis risk compared to micro-level sales (Kerer et al. 2016). This appears to be the least-explored distribution channel alternative so far. In Kenya, Takaful Insurance of Africa has tried to convince the county governments of Wajir, Isiolo, Marsabit, Tana River and Mandera to purchase insurance on behalf of vulnerable pastoralists in an attempt to use county resources to complement coverage through KLIP. They were interested in the concept but ultimately did not commit funding.⁴¹ A viable possibility of targeting clients at the meso-level could be to sell IBLI policies to pastoralist producer groups such as milk cooperatives. This idea is explored more in Section 5.5.2.

As a result of these difficulties, the IBLI underwriter in Kenya has closed operations for the 2020/21 season. In Kenya, Takaful Insurance of Africa has now ceased underwriting IBLI and KLIP and closed down its agricultural insurance department. However, in 2020/21 it is understood that the APA Insurance consortium, which is underwriting KLIP, will also re-open its sales of commercial micro-level IBLI in Kenya. In Ethiopia, Oromia Insurance Company continues to be the only insurer offering commercial micro-level IBLI.

Challenge 4: Enabling environment

In order for IBLI to be successful, there need to be functioning markets for fodder and supplementary feeds as well as veterinary services in the target regions but they are of-ten absent. A key part of the IBLI rationale is that insurance payouts are provided early during the season, thus enabling pastoralists to purchase fodder or other required livestock services to keep their core breeding stock alive through the drought period. Naturally, this can only work with the existence of such markets. However, research shows that this is often not the case. For example, an analysis of markets in the five northern Kenyan counties of Isiolo, Garissa, Marsa-bit, Turkana and Wajir showed that fodder market development is generally low and often in-formal (Wanyoike et al. 2018). This is confirmed by studies for other Kenyan counties such as Kajiado and Makueni (Omollo et al. 2017). In Baringo, where formal markets exist, this was only possible after major investments (Lugusa et al. 2016). Animal health services are often unavailable given that veterinary services across many IGAD countries have faced severe re-source constraints and been subject to ineffective institutional restructuring (ICPALD 2017, 2018). All expert questionnaires received from in-country counterparts likewise indicated that the availability of veterinary services to pastoralists was low across the region.

Where markets exist, the evidence on pastoralists' access to them is unclear. On the one hand, there is evidence showing that pastoralists rely on market-based livestock inputs during droughts (e.g. Taye et al. 2019). On the other hand, others show that access to fodder markets is a major issue for pastoralists in the ASALs and depends on many factors such as access to credit, weather and market information, land tenure system, exposure to shocks, off-farm in-come, age, gender and proximity to towns (Sala et al. 2020). A variety of major programs such as AfDB's Drought Resilience and Sustainable Livelihood Program for the Horn of Africa (DRSLP) and the WBG's Regional Pastoral Livelihoods Resilience Program have thus tried to improve overall market access for pastoralists. However, markets are still often far away and difficult to get to, making reaching them a costly undertaking (Wanyoike et al. 2018).

Lessons learned

Box 5 outlines the principal insights gained that should be considered in developing new micro-level IBLI programs.

⁴¹Telephone communication with former Chief Executive Officer Takaful Insurance Company of Africa.

Box 5: Key lessons learned for the design of any new potential micro-level IBLI program include the following.

- **The micro-level IBLI approach shows promise as a resilience-building tool for pastoralists.** For the micro-level IBLI program implemented thus far, there is robust evidence supporting the positive impacts of micro-level IBLI for pastoralists. However, while pastoralists paid an actuarially fair premium, the administrative and operational cost of insurers – at a factor of 1–3 times the currently paid premium – were heavily subsidized by international donors. Had the programs operated in a fully commercial manner, IBLI cost-effectiveness for pastoralists would likely have decreased drastically.
- **However, the current micro-level IBLI distribution model with its very high administrative and operating costs is not financially sustainable for insurers and their reinsurers and there is significant reason to doubt whether it can be in the short- to medium-term future.** Underwriters have tried to sell IBLI to pastoralists in the ASALs for the last 10 years. Many different distribution methods have been tried. However, none have been able to raise sales volumes significantly. Agricultural insurance is a hard product to sell anywhere in the world. It becomes almost impossible in conditions where there is virtually no infrastructure in the sales areas and target populations have little understanding of and trust in insurance concepts, as well as few resources to invest. No matter which new distribution channel insurers will attempt, it will be very hard to bring a commercial micro-level IBLI scheme to scale.
- **Any new micro-level IBLI program must explore new low-cost ways of distribution.** Any commercially oriented IBLI program targeted at individual pastoralists will need to find new ways for product distribution. The current operating costs are far too large and insurers are losing their patience over the poor results. There is no lack of ideas for new distribution methods and some of them may hold promise, especially meso-level approaches, which have the added benefit of reducing basis risk combined with applications of digital financial platforms such as mobile banking for the collection of premiums and settlement of payouts directly to each insured pastoralist. Potential options are explored more in Section 5.5.2.
- **Commercial micro-level IBLI must be accompanied by additional investments in capacity- and awareness-building of pastoralists.** Low demand of agricultural producers for insurance has been evidenced extensively and has been confirmed in the numbers for micro-level IBLI sales. As levels of financial awareness, understanding and inclusion are still very low among pastoralists, the importance of providing appropriate training services to them for an IBLI program to reach scale cannot be overstated. This may be a strong role for continued public sector support.

4.3.2 Modified macro-level automatic IBLI schemes

Challenge 1: Annual tender of insurance contract

For KLIP, insurance contracts are tendered out to underwriters every year, which acts as a major disincentive to private sector infrastructure investment. The Government of Kenya tenders out the insurance contract to the respective insurance private sectors on an annual basis. The annual tender procedure is a disincentive to Kenyan insurers to invest in insurance infrastructure, systems and procedures because of concerns they might lose the account at the next renewal. As only few Kenyan insurers have established permanent branch offices in the ASAL counties, investment in insurance awareness-creation and education of pastoralists has been minimal.⁴² In addition, there have been no incentives for the appointed insurer to make parallel investments in promoting IBLI micro-level sales. Thus, Fava et al. (2021) recommend that alternative options to the KLIP annual tender should be considered as well as a system to incentivize private insurers

⁴² Other major public-private partnership agricultural insurance programs where annual tendering is involved experience similar problems. This applies most notably to the Indian national crop insurance program, Pradhan Mantri Fasal Bima Yojana, where government premium subsidies currently exceed USD 3.5 billion. The Government of India now obliges tendering insurance companies to commit a minimum share of the premium to opening and staffing branch offices in each state and district to service the program's operations.

to promote parallel voluntary IBLI sales. It is therefore positive to note that in response to these concerns for the 2020/21 renewal, the Government of Kenya has amended the annual tender to a three-year contract to provide the winning insurer with incentives to invest in KLIP systems and procedures over the medium term. Under this multi-year contract, insurers will also be required to migrate from Government of Kenya fully funded premiums and automatic KLIP cover to voluntary sales and 50% partial premium subsidies, with the pastoralists funding the other 50% of their premiums (see Challenge 2 for further discussion of this last point).

Challenge 2: Limited financial support

With Government of Kenya and WFP paying 100% of respective premium costs, it is unclear whether the Kenyan and the Ethiopian schemes will be sustainable in the medium to long term. Both the Government of Kenya and WFP are looking for ways to exit the full-subsidies scheme:

- For KLIP, the Government of Kenya has previously considered to gradually decrease the premium subsidy level for KLIP beneficiaries over time – for example, each selected household could receive 100% premium subsidies for 5 TLUs in year 1, for 4 insured TLUs in year 2, 3 insured TLUs in year 3, and 0 insured TLUs by the end of year 5. This would be in the hope that by demonstrating the benefits of KLIP in drought years, pastoralists would save to pay premiums in future. This would enable the Government of Kenya to maintain its budget each year and to allocate premium subsidies to new beneficiaries in each county. A further alternative would be to switch to a system of partial (50%) premium subsidies over time so that benefitting pastoralists would no longer receive fully subsidized cover for 5 TLUs: rather they would receive partial premium subsidies to make cover more affordable and to incentivize them to continue purchasing voluntary IBLI (WBG 2016a). This seems to be the approach currently preferred by the Government of Kenya, which is planning to remove 100% subsidies and switch to 50% subsidies by 2022; however, the operational details remain unclear.⁴³
- For SIPE, WFP, having committed to paying for 100% of premiums for the first five years of operation, is looking for an exit strategy by either transferring payment responsibility to beneficiaries and/or the national or regional government.⁴⁴

Challenge 3: Creation of disincentives to purchase voluntary micro-level IBLI

KLIP has acted as a disincentive to individual pastoralists purchasing micro-level voluntary IBLI. IBLI micro-level insurers have complained that there is not a level playing field between the fully subsidized KLIP and the unsubsidized voluntary IBLI program. In the original planning of KLIP it was recognized that the provision of fully funded cover to a sub-group of vulnerable pastoralists who could not afford to pay their premiums would potentially act as a disincentive to other pastoralists to purchase micro-level 'unsubsidized' IBLI cover. This assertion is factually incorrect, as micro-level IBLI premiums have always been subsidized as they are based on actuarially fair premiums of about 7% (Ethiopia) to 10% (Kenya), which do not include loadings of 40% to 50% to contribute towards administration and operating expenses. To ensure that voluntary sales of IBLI were not adversely affected, the Government of Kenya and insurers could have (i) replaced the actuarially fair rates by fully loaded premiums to match the KLIP premiums and then (ii) offered incentives to producers to make voluntary KLIP purchases by offering partial premium subsidies worth 50% of the full commercial premium rate under the slogan of 'buy one, get one free'. These partial premium subsidies could be capped at, e.g., 20 TLUs to prevent the relatively richer pastoralists from disproportionately capturing the benefits of the partial premium subsidy program. At the inception of KLIP in 2015/16, the Government of Kenya expressed concerns over (i) its lack of control over selection of pastoralists under the voluntary IBLI component and (ii) the lack of additional budget resources to finance partial (50%) premium subsidies on a voluntary IBLI component.

⁴³At the 2020/21 renewal tender of KLIP, the Government of Kenya advised the winning consortium of its intention to switch out of 100% premium financing by 2021/22 and to replace this by a system of partial (50%) premium subsidies for all beneficiaries and insured. There are likely to be many challenges of making this switch, not least legal and regulatory issues of whether pastoralists should now be treated as insured policyholders and issued with an individual insurance policy and certificate of insurance, how to collect the 50% premium payments from pastoralists who have previously not contributed at all to their premiums (telephone communication with former Chief Executive Officer of Takaful Insurance of Africa).

⁴⁴Telephone communication with WFP staff.

Challenge 4: Beneficiary registration and claims handling

For KLIP, the registration of beneficiaries and handling of claims has been a major challenge. Especially in the beginning of the program, registration of KLIP beneficiaries and payout management was done manually. During the 2016/17 short rains season, this led to de-lays of three months or more to process and settle insurance payments to some KLIP benefi-ciaries whose account details were incorrect or missing (Fava et al. 2021). Through the use of digital tools, processes have become more reliable and faster but there is room for further im-provement. WBG has recommended the mandatory use of a livestock electronic registry system for KLIP that could build on existing private sector (e.g. bank or mobile money) or the HSNP infrastructure (Government of Kenya 2018b). Indeed, the HSNP has a comprehensive registry in place comprising almost 400,000 households in the ASALs, including wealth and banking information,⁴⁵ and using that same database could aid integration of drought risk financing pro-grams in the ASALs overall (WBG 2016a).

For SIPE, these issues were addressed from the start by integrating with the Productive Safety Net Program and making access to mobile banking a pre-requisite. SIPE is closely aligned with the Ethiopian Productive Safety Net Program. It uses the Productive Safety Net Program household registry system to target and verify eligible beneficiaries with 5–11 TLU. SIPE beneficiaries are also registered for the Productive Safety Net Program food-for-work program (C4ED 2019). For claims handling, WFP engaged the services of the Somali MicroFinance Institution and Belcash to ensure that each beneficiary household either had a fixed takaful bank account with the microfinance institute or a HelloCash mobile banking account with Belcash.⁴⁶

Challenge 5: Alignment with other drought risk financing initiatives

KLIP has had challenges to align effectively with other drought risk financing initiatives in Kenya. The Government of Kenya has supported a number of different disaster risk financing initiatives benefiting pastoralists in the ASALs, including besides KLIP e.g. IBLI, HSNP, ARC. The different initiatives are not fully aligned in a number of different ways (Lung 2020a): (i) beneficiaries could be double targeted – HSNP targets the poorest drought-affected households and KLIP those owning at least 5 TLU – these criteria can overlap and thus beneficiary pastoralists could unintentionally receive payouts from multiple initiatives in case of a drought; (ii) operating systems are not fully integrated: KLIP and HSNP use different beneficiary registries and different payout delivery systems (as described above); pooling them could unlock economies of scale; and (iii) while all target severe drought, the disaster risk financing initiatives all use slightly different triggers. In case of a drought, this could mean that some activate while others might not. The rationale for these differences has not been articulated clearly. The further scaling up of KLIP will require stronger commitments by policymakers, planners and development partners to coordinate and harmonize KLIP with other drought risk financing instruments, with the goal of promoting synergies between their finance mechanisms, targeting approaches and management infrastructure (Fava et al 2021).

Meanwhile, the SIPE program, through its shared use of the registration database with the Productive Safety Net Program, is better integrated in the overall Ethiopian drought risk financing approach. WFP is also working closely with USAID and Mercy Corps in SIPE covered woredas to strengthen insured pastoralists' linkages to markets and inputs and financial (savings and credit) and veterinary services. By linking (bundling) WFP's livestock drought insurance component with Mercy Corps' production-related activities, this is predicted to lead to more sustained drought resilience and livelihood building.⁴⁷

⁴⁵The Equity Bank system combines a smart card (ATM-type plastic bank credit card) with a portable hand held point of sale (POS) device that includes (a) biometric (finger print) recognition thereby eliminating identity fraud, and (b) a printed receipt showing the record of the transaction that can be given to the card holder. Equity Bank's system allows the rapid electronic transfer of financial payments on a bi-monthly to tens of thousands of HSNP card holders in the four counties at very low cost. The company has also established a large branch network of Sub-District branches and Ward level Accredited Agents throughout the four HSNP Counties and also other ASAL Counties

⁴⁶Belcash Technology Solutions PLC, a subsidiary of Belcash International from the Netherlands, signed an agreement with Ethio-Telecom to introduce mobile banking in January 2015. Belcash works very closely with SomaliMFI in Somali Region. It offers the following mobile banks services: transfer and receive money; bulk payment (e.g. salary of an employee); customer business account; cash withdrawal; purchasing of mobile cards.

⁴⁷Telephone communication with WFP staff.

Lessons learned

Box 6 outlines the principal insights gained that should be considered in developing new macro-level IBLI programs.

Box 6: Key lessons learned for the design of any new potential modified macro-level IBLI program include the following.

- **Modified macro-level IBLI programs can help build drought resilience of the most vulnerable.** Increasingly, evidence of the positive impacts of KLIP and SIPE is emerging. These include a better protection of pastoralist livelihoods in the face of drought and an enhanced management of scarce public resources to respond to drought.
- **Modified macro-level IBLI programs should actively help build an enabling environment for micro-level voluntary IBLI.** Macro-level programs can help enable the operationalization of micro-level IBLI programs. For this to happen, however, they need to be planned and operated together as one. Strong incentives should be put into place encouraging underwriters of the modified macro program to also invest in micro-level distribution infrastructure. E.g. Fava et al. (2021) suggest that full subsidies should be allocated proportionally to the number of micro-level policies sold, thus incentivising the private sector to invest in developing infrastructure for micro-level sales (see also Section 5.5.1).
- **A clear graduation and financial sustainability framework should be agreed in advance.** Both KLIP and SIPE struggle with ensuring longer-term sustainability of the full premium financing on their respective programs. While both consider leading into a fully commercial IBLI program with no or partial premium subsidies, no definitive decisions have been made. This also has to do with the challenges faced by the micro-level IBLI program, as reducing premium subsidies to 50% and relying on micro-level IBLI in its current form does not seem like a sustainable option either. For future programs, financial contributors should plan for the longer term from the beginning. If the plan is for the modified macro-level program to lead into a commercial micro-level program, linkages to such micro-level IBLI should be strengthened.
- **Insurance contracts should be concluded on a multi-year basis to encourage private sector investment.** The current one-year government tender and revolving insurance structure of KLIP is too short for insurers to be confident to invest in distribution and awareness-creation networks and thus also aid micro-level IBLI sales. Future programs should consider providing insurers with longer contracts. One interviewed insurance company suggested that a period of three to five years would be much more appropriate.⁴⁸ Here it should be noted that in response to this concern, for 2020/21 the Government of Kenya has issued a three-year contract to KLIP pool co-insurers.
- **To the greatest extent possible, beneficiary selection and claims handling should be done using digital tools.** Beneficiaries should be registered in electronic databases and receive potential insurance payouts directly into mobile money bank accounts. This will not only facilitate administration greatly but it also strengthens accountability in a major way, supports financial inclusion and can, when sharing databases, enhance alignment with related initiatives. While many pastoralists still do not have access to mobile money bank accounts, their share is shrinking rapidly. Any potential future initiative could also consider investing in large-scale pastoralist registration and/or providing them with mobile banking access.

⁴⁸Telephone communication with the chairman of APA Insurance, Kenya.

5. Structuring and operational considerations for developing an IGAD regional IBLI approach

This section takes stock of previous contextual sections to discuss potential approaches to structuring an IGAD regional IBLI approach and to exploring needed operational considerations. A regional IBLI approach would be one implemented in multiple countries in the region at the same time. Not all countries need necessarily be included; indeed, there may be a rationale for a gradual approach. The key idea would be to share a common approach across countries, including shared technical expertise, shared IBLI product design and operational infrastructure and risk pooling.

This section is structured as follows. Section 5.1 presents the rationale for a regional approach. Section 5.2 outlines needed considerations on aligning a regional IBLI approach with other existing disaster risk financing programs. Section 5.3 proposes three overall structuring options for a regional IBLI approach. Section 5.4 describes the key operational functions that would need to be covered and stakeholders that could take these on. Section 5.5 describes novel program features that policymakers may consider integrating into the regional IBLI program given the lessons learned from the existing IBLI programs. Section 5.6 offers considerations for why any IBLI program will require continued public support and what this means for policymakers.

5.1 Rationale for a regional IBLI approach

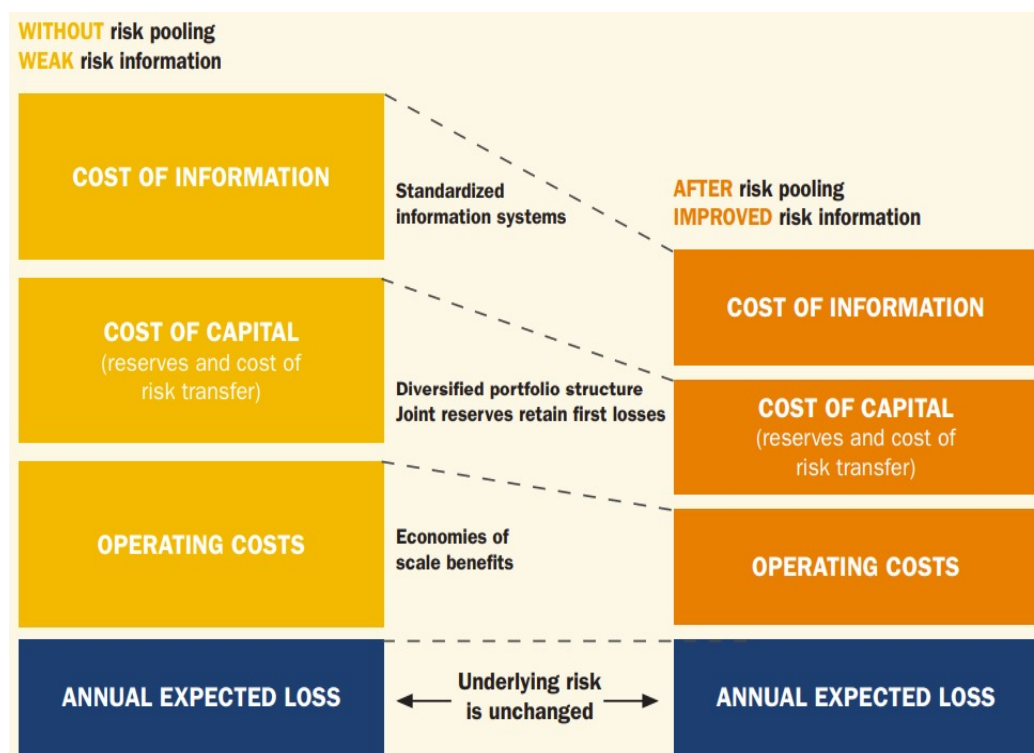
There is a strong rationale for a regional approach. Key elements include the following.⁴⁹

- **Shared expertise.** Many IGAD pastoralist areas share similar problems related to high drought exposure and vulnerability. IBLI is a potential solution to strengthening local resilience but it is a complex technical area requiring understanding of risk modelling, risk layering, actuarial analytics and the structuring of insurance markets. For many countries it can be difficult to develop this knowledge locally. Establishing a regional program that centralizes and shares expertise on the respective technical areas can be an effective investment from a country perspective.
- **Lower operational cost through shared infrastructure.** Rather than operating a similar program management structure in each interested IGAD country, a regional solution offers the opportunity to share infrastructure and thus make use of economies of scale, which ultimately lowers insurance premium rates. For example, program institutional and technical design could be standardized across countries, there could be a single program coordination body, weather data management systems could be shared, there could be a central beneficiary registry, capacity building and awareness creation for pastoralists could be centralized, and market distribution channels could be shared across countries and insurance companies (Figure 30).

⁴⁹Based on WBG (2020a) and stakeholder interviews.

- **Creation of a larger market which is of greater interest to the private sector.** The IBLI product volumes in Kenya and Ethiopia have so far remained relatively small. This has created significant uncertainty in the market – insurers have been reluctant to make significant investments in their IBLI operations, uncertain whether it was worth the trouble and have at the same time feared that major international reinsurers could withdraw from the IBLI market altogether. By creating a larger market for the region, these fears could be addressed. Depending on the program structure, a regional market could also strengthen competition across countries, as insurers may be able to expand IBLI operations into other countries.
- **Risk diversification benefits.** A regional initiative could pool drought risk across a greater geographical area and diversity than in any one single country. While the underlying drought risk exposure for individual countries would remain the same, an eight-country regional pool should offer the potential for geographical risk diversification, namely the fact that even in a severe drought, not all eight countries would be equally affected in the same year (Figure 31).
- **Promoting peace in the region.** Finally, a regional IBLI initiative could help to lower conflict and tensions across the IGAD region. With population growth, expansion of agro-pastoralism, climate change and land degradation, there is increased conflict among agricultural producers in the ASALs over scarce natural resources. Implementing insurance at regional level with complementary resilience interventions could stimulate IGAD countries to identify mechanisms to address cross-border migration challenges. In addition, through insurance payouts, during major drought pastoralists would have a broader portfolio of coping options that may reduce conflicts over scarce forage resources.

Figure 31: Impact of risk pooling on insurance premiums.



Source: WBG 2017a.

It should be noted that there are also arguments against adopting a regional approach. These include the added operational complexity of managing a large multi-country program and the addition of elements into the discussion that may be irrelevant for some countries. For example, countries with lower insurance market development and/or without IBLI experience are likely to face different challenges than those with more developed markets and/or 10 years of experience in IBLI implementation. In addition, there could also be an argument around a weakening of the social contract between pastoralists and their respective national government should a regional rather than a national solution be pursued.

5.2 Alignment with existing disaster risk financing programs and livestock development programs

5.2.1 Alignment with existing IBLI livelihoods protection initiatives

Alignment with existing disaster risk financing mechanisms in each participating country would be a fundamental pre-requisite for designing a regional initiative. Section 3.4 showed that across the IGAD countries, governments have invested in a range of ex-ante financing measures to assist pastoral communities during times of drought. IBLI insurance should complement these and, wherever possible, avoid double targeting beneficiaries.

At the regional level, the AfDB-funded DRSLP and the WBG-funded Horn of Africa programs, which are both being considered for the region, are potential vehicles for IBLI implementation. Section 3.3.2 noted that both AfDB and WBG are considering implementing large-scale programs for countries in the IGAD region. Both the AfDB and the WBG programs aim to include livestock insurance components that should aim to contribute to one common, rather than separate, programs. The AfDB and WBG initiatives should also coordinate investing in complementary accompanying measures.

One size does not fit all and IBLI solutions are only suited to certain pastoralists. This includes those pastoralists (i) whose main livelihood is based on livestock rearing relying on extensive grazing in communal rangelands and (ii) who have a minimum critical herd size to benefit from such a protection. The pastoral literature for the Horn of Africa suggests that the minimum herd size to be able to sustain drought and pest and disease shocks is 10–20 or more TLU per household (Chantararat et al. 2014; Cervigni and Morris 2016). In Kenya, this minimum herd size requirement was reduced to 5 TLUs on the basis of recent census data which showed that the average size of herds in Turkana, Wajir, Mandera and Isiolo was 3–5 TLU and also because of the program focus on vulnerable pastoralists with smaller livestock herds targeted under the fully funded (100% premium subsidies) KLIP.

Beneficiary registration and segmentation of the pastoral population according to their livestock ownership, wealth and ability to manage risk in order to target the right disaster risk financing instruments to each segment of the population is a key prerequisite for developing an IBLI initiative. Segmentation can be based on existing census or survey data by pastoral households where this exists; otherwise it would have to be collected separately (see also Section 5.5.5). Segmentation based on such data is illustrated in Figure 31 by reference to KLIP and SIPE.

5.2.1.1 KLIP in Kenya

KLIP was launched specifically in Kenyan counties where a social protection program already existed to link in to this program. KLIP was started in four counties of northern Kenya because the HSNP was already operating there. Linking KLIP and HSNP offered two significant opportunities: (i) HSNP had already created an electronic registry of all households living in these counties, including their livestock ownership and poverty levels. This data could be used by KLIP to identify potential vulnerable pastoralists owning more than 5 TLUs as KLIP beneficiaries; and (ii) HSNP, in conjunction with Equity Bank, had opened electronic bank accounts for HSNP beneficiaries, which could also facilitate direct payouts to KLIP beneficiaries.

Beneficiary targeting between HSNP and KLIP was segmented according to pastoralists' wealth status. HSNP targeted up to 100,000 chronically poor households for its unconditional cash transfer program and then a further 180,000 households under its drought scalability fund. Meanwhile, KLIP targeted up to 70,000 slightly less vulnerable pastoralists for the fully subsidized livelihoods program, insuring 5 TLUs per beneficiary and then micro-level IBLI sales for the remaining semi-commercial pastoralists (Figure 32).

Figure 32: Designing suitable disaster risk financing instruments for different segments of the rural population in Kenya.

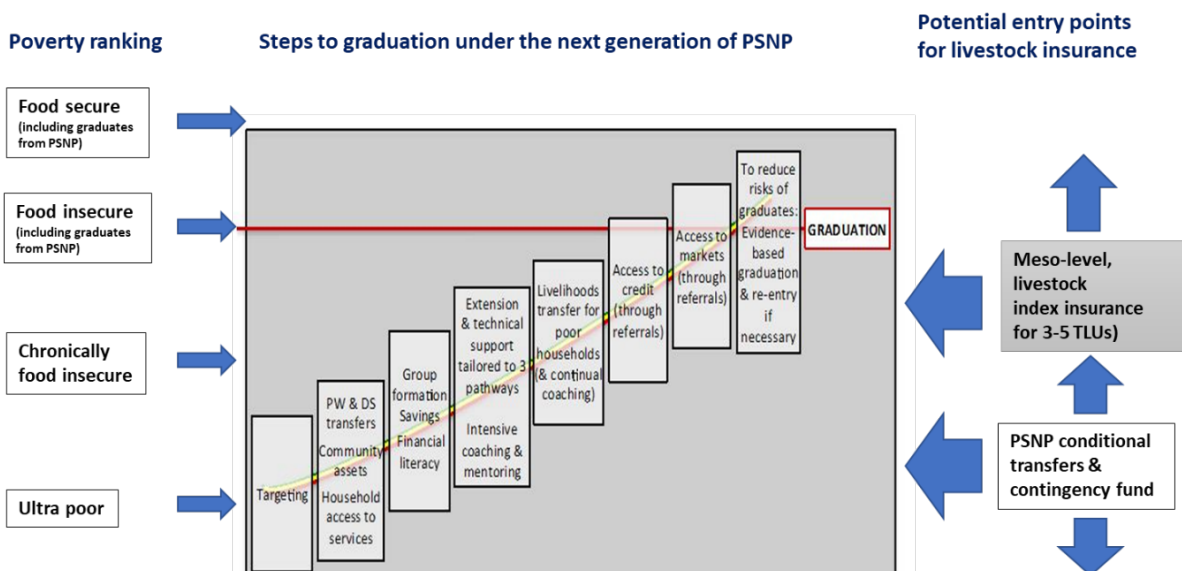
Risk Financing Instrument	Income Level	Livestock Safety Net and Insurance Program	Target Audience	Cost Share
Commercial Micro-Retail Livestock Insurance (IBLI)	Above	ILRI-IBLI Subsidized commercial livestock insurance	Medium-large Pastoralists	Partial premium cost sharing by SDL-GOK
Modified Macro-level Drought Risk Insurance (Disaster/Livelihoods Protection -KLIP)	Low Income	SDL-MALF KLIP Modified Macro-level NDVI insurance program for 70,000 vulnerable pastoralists above HSNP poverty levels	Vulnerable Pastoralists 5 – 20 TLU's	Premium 100 % subsidized by SDL-MALF, GOK
Scalability Mechanism – Drought Risk Fund	Vulnerable	Hunger Safety Net Program (HSNP), providing SCALABLE cash transfers to an additional 180,000 vulnerable households	None or very few livestock	Costs 100 % subsidized by NDMA
Cash Transfers Social Protection Fund	Chronically vulnerable	Hunger Safety Net Program (HSNP), providing non-conditional cash transfers to 100,000 very poor households.	None or very few livestock	Costs 100 % subsidized by NDMA

Source: WBG 2016a.

5.2.1.2 SIPE in Ethiopia

In Somali Region in Ethiopia the SIPE program is closely aligned with the Productive Safety Net Program. Many beneficiaries are ultra-poor, from chronically food-insecure households owning small numbers of livestock. They are often fully dependent on Productive Safety Net Program cash and food transfers for their livelihoods. SIPE beneficiaries are drawn from the segment of Productive Safety Net Program beneficiaries who are relatively better off and who own between 5 and 11 TLUs. A central aim of SIPE is to help these vulnerable pastoralists become more resilient to climatic and other shocks to increase their production and incomes and thereby graduate out of the Productive Safety Net Program (Figure 33).

Figure 33: Alignment of SIPE beneficiaries with Productive Safety Net Program recipients of conditional cash and food transfers.



Source: WFP 2016.

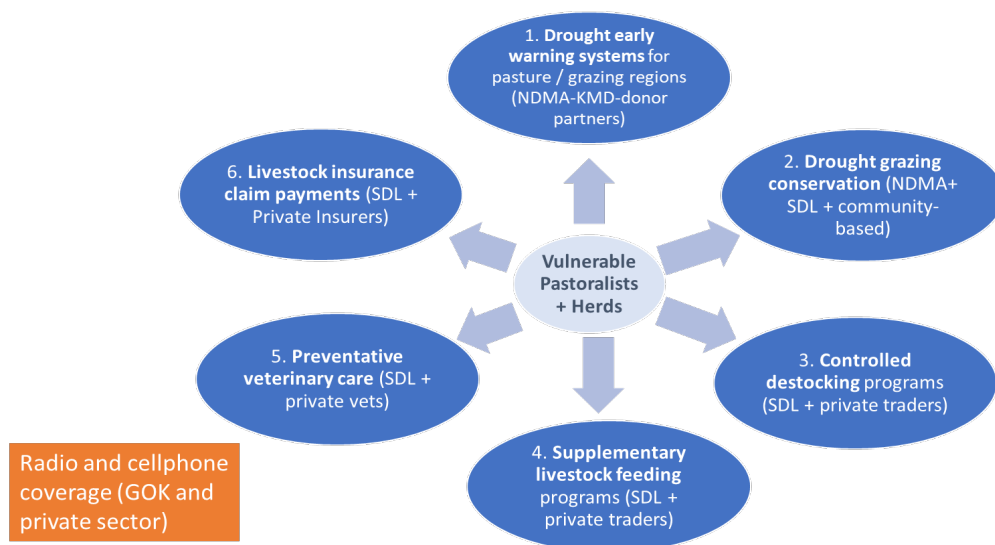
5.2.2 Alignment with existing livestock development strategies and programs

IBLI is only one of many required parts to build the drought resilience of pastoralists effectively. Certain conditions must be in place for drought insurance to be effective. This includes, e.g., the existence of markets for the goods pastoralists' need in case of drought as well as access to them – otherwise cash payouts will be of little use (see Section 4.3 on challenges and lessons learned on the Kenya and Ethiopia IBLI programs). Furthermore, comprehensive drought resilience also requires the strengthening of physical and environmental, not only financial, resilience.

Thus, IBLI should be embedded in a comprehensive drought resilience strategy. For example, the original design plan for KLIP identified six elements of a drought risk management strategy into which IBLI was to be included as the final one. The elements are shown in Figure 34.

1. **Drought early warning system** for pastoral regions of Kenya. Such a system would enable pastoralists to know the main areas likely to be affected by drought and to plan their migratory grazing plans accordingly as well as other drought mitigation measures. Information could be broadcast via radio, smart phones or SMS messages to pastoralists and their community leaders.
2. **Adoption by pastoralists and country governments of drought conservation grazing** and establishment of forage reserves.
3. **Controlled destocking of non-breeding livestock**, which in turn would necessitate strengthening of public and private sector live-animal markets in Kenya and export markets in the Horn of Africa
4. **Creation of livestock strategic fodder and supplementary feed reserves** by government and the private sector to be accessed by pastoralists in times of severe drought and depleted forage. This should be accompanied where necessary by increased numbers of deep-water holes for livestock.
5. **Strengthened veterinary capability** to provide mass vaccination campaigns against outbreaks of epidemic diseases which often accompany major droughts when animals are undernourished and weakened.
6. Only then should one add the final component: IBLI – **pasture drought index insurance** designed to trigger early payouts to pastoralists to enable them to purchase fodder and animal feeds and animal drugs and if necessary to truck in water to keep their core breeding herds alive until the drought is over (WBG 2016a).

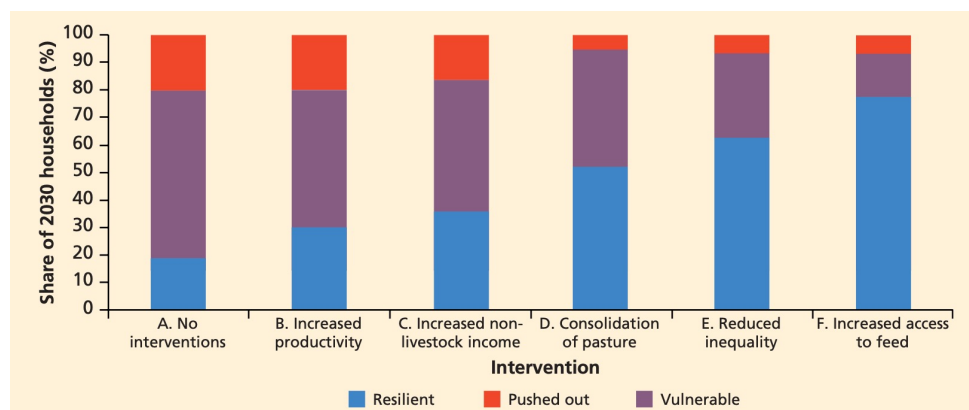
Figure 34: Kenya: components of an integrated drought risk management and risk transfer strategy for pastoralists.



The need to design strategies and programs that strengthen the resilience of pastoralists to droughts and other diseases is also identified in other studies. Cervigni and Morris (2016) note that the main opportunities in African pastoral systems lie not so much in further increasing productive efficiency (which is already high compared to the ranching systems of Australia and the USA), but rather in establishing systems that enable buffers and rapid adjustments to the ‘boom and bust’ cycles characterizing pastoralism in Africa. This could be achieved by maintaining the mobility of herds to allow them to avoid climate shocks; improving animal health services to reduce losses from disease outbreaks and climate shocks facilitating early destocking when drought is imminent and restocking when rains resume; fostering better market integration, in particular by exploiting complementarities between drylands as the breeding areas and higher rainfall areas for fattening younger stock from the drier areas; and consolidating smallholdings of livestock into larger, more resilient and more viable units.

A recent study for pastoral areas across Africa models the impacts of a range of interventions on developing pastoralist drought resilience (Figure 35) (Cervigni and Morris 2016). The study estimates that in the absence of any interventions at all, by 2030 77% of pastoralists and 58% of agro-pastoralists in the drylands of Africa would own 5 TLUs or less. They would thus be extremely vulnerable to being pushed out of livestock rearing and lose their livelihoods. The study uses simulation analysis to model the impacts of a series of incremental measures to increase resilience, productivity and incomes of these pastoralists to show that if all measures were adopted as an integrated package, nearly 80% of pastoralists/agro-pastoralists would be resilient and only 7% would be susceptible to being pushed out of livestock keeping. The same study estimates that the costs of implementing these measures would amount to an average of USD 27/person/year for pastoral and ago-pastoral households combined and an average of USD 83/person/year for pastoralist-only households, ranging from a low of USD 12/person/year for agro-pastoralists in Ethiopia and a high of USD 386/person/year for pastoralists in Niger. The costs for delivering improved veterinary services and early offtake of young male animals across the entire Africa region are estimated at about USD 0.5 billion per year compared to the current cost of food aid of USD 4.0 billion (Cervigni and Morris 2016).

Figure 35: Impact of a combination of interventions on the resilience status of livestock keeping households by 2030.



Source: Cervigni and Morris (2016) citing De Haas (2016).

Note: Each intervention includes the effects of the ones preceding it; so, for example, intervention B includes the effects of intervention A; intervention C includes the effects of A and B; and so forth.

5.3 Overall structuring options for a regional IBLI approach

5.3.1 Micro, meso or macro entry points for a regional IBLI approach

Under any IGAD regional IBLI approach, **public and private stakeholders will need to decide whether to start with (i) a voluntary micro-level IBLI retail program sold to individual pastoralists, (ii) a macro-level sovereign insurance program for IGAD governments to enable them to provide timely drought response to drought-affected pastoralists, (iii) a modified macro-level livelihoods protection program purchased by governments and/or**

donors and development partners, or (iv) a combination of two or more of these approaches. There are some fundamental differences in the insurance organizational structure and operating requirements and costs of implementing these three approaches, which were summarized in Figure 18 and which are dealt with in more detail in Annex 3.

While the IBLI contract design and triggers may be similar or identical for all three options, there are major differences in the operational requirements of implementing them.

- **A micro-level IBLI program can only be implemented successfully if the private insurance company establishes an effective insurance retail network in the pastoral regions.** These networks need to (i) conduct IBLI capacity-building and awareness-raising programs, (ii) market and sell policies to individual pastoralists, (iii) collect premiums against the issuance of an individual policy to each insured and (iv) ensure that the pastoralist has a means of being contacted and receiving the money in the event of a payout. Section 4.3.1 showed that the administrative costs of implementing a micro-level IBLI program are extremely high and that to date no insurer has been able to design a system that can operate commercially and cover its operating overhead cost, let alone settle claims payouts sustainably.
- **Conversely, under a sovereign macro-level IBLI insurance program, there is no need for any insurance infrastructure on the ground.** Instead, it is the insured government that needs to design delivery channels to distribute potential payouts to drought-affected populations. The operating costs of a sovereign risk insurance program are therefore very low from the viewpoint of an insurance company. However, as the ARC experience has shown, there are major costs borne by ARC Agency for client awareness creation, servicing, establishing country contingency plans, etc.
- Finally, **for a modified macro-level IBLI livelihoods protection program, insurance operational requirements and costs are considerably lower than for an individual micro-level IBLI program.** Compared to a micro-level IBLI cover, under a modified macro-level approach, insurers save resources by issuing a single master policy to government against the payment of a large lump-sum premium payment, rather than having to retail many policies to individual pastoralists, each one generating a very small premium payment. The operational and administrative costs are thus greatly reduced. However, for an effective modified macro-level program, beneficiaries must be registered, they must have a means to receive payments, and investments must nonetheless be made to build their financial capacity and create awareness of the program.

On the basis of the 10 years of experience in Kenya and Ethiopia with implementing micro-level IBLI and the modified macro-level KLIP/SIPE programs, the entry points for an IGAD regional IBLI initiative might centre on the following.

1. **Starting with a macro-level sovereign risk financing IBLI program or a modified macro-level livelihood protection IBLI program** to create a sufficiently high pot of premium to attract interest and investment by local insurance companies and reinsurers in operating infrastructure, and systems and procedures on the ground, which are pre-conditions for the effective implementation of micro-level commercial IBLI.
2. **Developing and implementing in parallel micro-level commercial IBLI.** Here the objectives would include to research, develop and improve IBLI distribution models in the local context of each country, to fine-tune linkages with other reliance interventions, and to improve insurance awareness and participation of pastoral communities. In markets with existing IBLI experience (Ethiopia and Kenya) and in other relatively well-developed insurance markets (Sudan and Uganda), commercial micro-level IBLI should ideally be implemented in parallel with the macro-level IBLI livelihoods protection cover from the start. In other countries, commercial micro-level IBLI should be implemented only once the macro program has reached scale and the insurance sector has had some time to develop experience and networks on the ground.

5.3.2 Institutional insurance structuring options for a regional IBLI program

This section explores three potential insurance structure options for implementing a regional IBLI program for IGAD countries:

1. **a sovereign macro-level risk insurance approach** using a suitable captive insurer to achieve pooling of risk at the reinsurance level;
2. **a local domestic market-based approach** building on and scaling up the existing livestock (IBLI) insurance markets in IGAD countries;
3. **a hybrid approach** building on the existing livestock insurance markets in IGAD countries and using a suitable captive insurer in countries with weak existing agricultural insurance markets.

The key objectives, features and advantages and disadvantages of these three options are reviewed in the sections below drawing on the interviews that were conducted with insurance operational feasibility assessment stakeholders.

5.3.3 Macro-level sovereign risk insurance approach (Option 1)

5.3.3.1 Key features and options

If the central objective of a regional IBLI program in the IGAD region is to provide countries with timely finance to respond to catastrophic droughts in pastoral regions, then arguably the easiest and most cost-effective option would be for governments to purchase sovereign risk insurance from an existing specialist disaster risk insurer licenced to operate in the IGAD region, such as ARC. ARC is a regional mutual (not for profit) insurance and reinsurance captive company owned by members of the African Union. An alternative regional African insurance option is African Trade Insurance which specializes in investment insurance, political risk insurance and trade credit insurance. African Trade Insurance's membership includes, in the IGAD region, Ethiopia, Kenya, South Sudan and Uganda. African Trade Insurance does not, however, specialize in agricultural crop and livestock index insurance and it lacks an on-the-ground implementational capability.⁵⁰

ARC is a specialized agency of the African Union which was established in 2012 as an African-owned, index-based weather risk insurance pool and early response mechanism combining the concepts of early warning, disaster risk management and sovereign risk finance. ARC's mission is to use modern finance mechanisms such as risk pooling and risk transfer to create pan-African climate response systems that enable African countries to meet the needs of people harmed by natural disasters (ARC 2016). ARC comprises two entities: ARC Agency and ARC Ltd. ARC Agency is the capacity building, educational and advocacy arm of ARC, while ARC Ltd. is a sovereign-level mutual insurance company that provides macro-level weather-related insurance coverage to member states.

Currently ARC Ltd.'s main insurance product is a drought index cover that uses satellite weather surveillance software Africa RiskView. Using different data sources, Africa RiskView monitors drought events in participating countries and, when one is detected, estimates the respective emergency response cost in that country. On this basis, ARC Ltd. sells macro-level drought insurance policies to participating client governments that receive payouts in case of drought in order to respond to the drought. ARC Ltd. transfers some of the risk it pools from different countries to international reinsurance markets. By pooling risk across countries, ARC Ltd. is able to obtain cheaper reinsurance. ARC Ltd. contracts an international specialist reinsurance broker to place its reinsurance requirements with AAA-rated insurers located mainly in Europe and Bermuda.

Following the launch of its Africa RiskView drought index insurance product in 2014/15, ARC struggled to achieve significant uptake by African Union member countries; however, following AfDB's agreement to provision of premium financing support under the Africa Disaster Risk Financing program starting in 2018, demand has increased and in 2019/20 11 countries purchased ARC drought cover. Following requests from regional member countries for premium financing support, AfDB launched the Africa Disaster Risk Financing program, which will run from 2018–2022 as a comprehensive, sustainable solution for risk transfer within the broader context of disaster risk management.⁵¹

⁵⁰Under this study, discussions have not been held with African Trade Insurance about their possible interest in supporting any future IBLI regional initiative in the IGAD region.

⁵¹<https://www.afdb.org/fr/press-releases/climate-and-disaster-risk-financing-get-fresh-boost-african-development-bank>

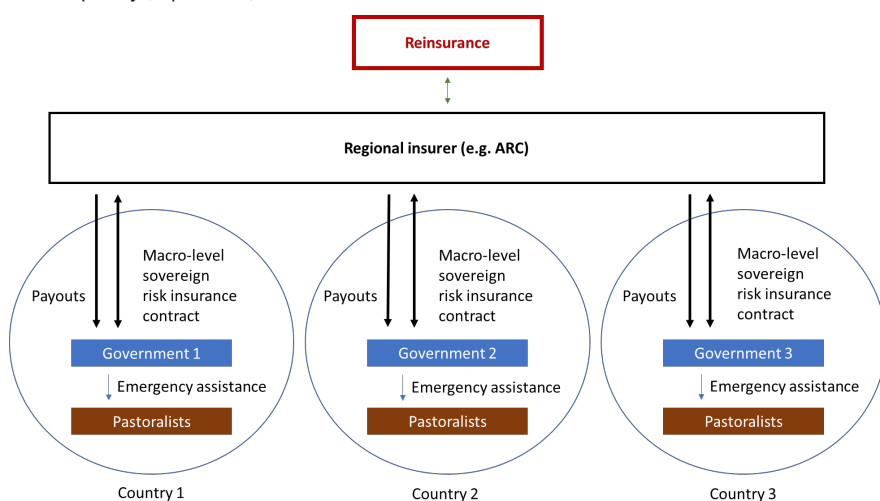
In addition to its sovereign drought risk insurance programs with national governments, ARC Ltd. has, since 2019, also offered ARC Replica coverage to humanitarian actors such as WFP and the Start Network⁵² to expand climate risk insurance coverage to more people and improve the effectiveness of emergency humanitarian response in vulnerable African countries prone to climate risks. These organizations purchase ARC Replica products (e.g. Africa RiskView drought cover) to finance disaster response programs for their own vulnerable client bases in countries where ARC Ltd. is operating. In 2020, this comprised Burkina Faso, Mali, Senegal, the Gambia, Zimbabwe and Mauritania (see Annex 5 for more details).

Recently, ILRI has assisted ARC to develop a new satellite-based rangeland⁵³ drought index insurance product specifically designed for extensive pastoral systems (Fava et al. 2018). The new ARC IBLI product has been tested in East Africa and the Sahel. Arguably ARC Ltd. is therefore well placed to roll out its IBLI macro-level sovereign drought risk insurance product in the pastoral regions of all eight IGAD countries quickly and to pool the IBLI program under its existing reinsurance treaty agreements with international reinsurers. Both IGAD governments and NGOs would be able to purchase the ARC-IBLI product for their clients located in pastoral regions: for IGAD governments facing budgetary constraints, the option to finance the macro-level IBLI premiums through the Africa Disaster Risk Financing facility would be a major advantage.

To date, however, only three IGAD countries have signed up to ARC as members: Kenya, Sudan and Djibouti. To date, ARC Ltd. has only sold Africa RiskView drought index insurance to one IGAD country, the Government of Kenya in 2014/15 and again in 2015/16. Both of these years were claims free. Since then, the Government of Kenya has declined to purchase insurance cover from ARC. There would therefore be a need to obtain the support from all participating national governments in the IGAD region to contracting ARC to underwrite an IGAD region-wide sovereign risk IBLI program. (Further details on ARC are provided in Annex 5.)

Figure 36 shows schematically what a macro sovereign drought insurance cover could look like using the ARC model for underwriting drought risk in pastoral areas in the eight countries in the IGAD region.

Figure 36: Schematic of macro-level sovereign drought IBLI cover for pastoralists in countries in the IGAD region using the African Risk Capacity (Option 1a).



Source: Authors.

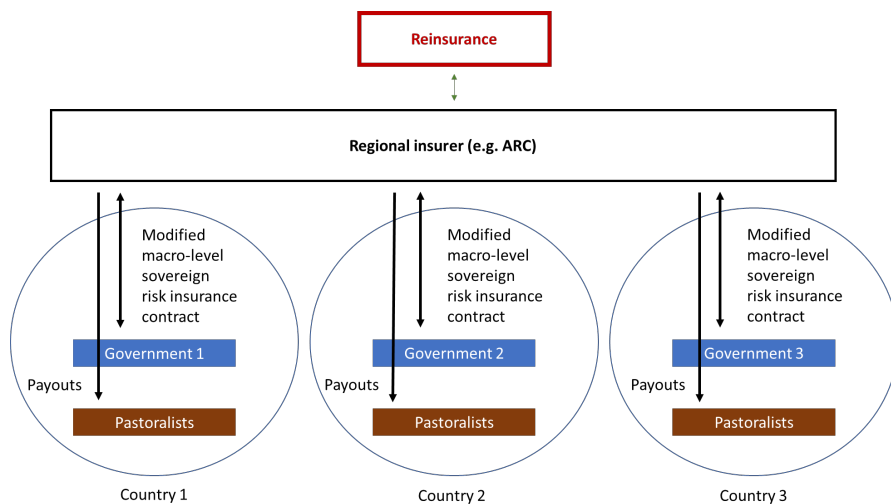
As an alternative option, it would also be conceivable to restructure a macro-level sovereign insurance approach with ARC as a modified macro-level cover in order to make payouts directly to pre-registered pastoralists (beneficiaries). Under this alternative structure, ARC would provide any potential payout, not to governments but directly into the pre-selected and registered pastoralists' bank accounts, much like insurers under the KLIP or SIPE modified

⁵²In Senegal, ARC Replica is run in partnership between Start Network, the Government of Senegal, ARC and WFP. It is funded by the German Federal Ministry for Economic Cooperation and Development (BMZ) through the German Development Bank, Kreditanstalt für Wiederaufbau (KfW).

⁵³This product, termed cNDVI, performs better than ARC's water requirement satisfaction index products in measuring biomass availability in rangelands (Fava et al 2018).

macro-level schemes in Kenya and Ethiopia. The benefit of such an approach would be that insurance payouts would support pastoralists more directly and, arguably, more quickly. Figure 37 shows schematically how such a scheme could function.

Figure 37: Schematic of modified macro-level sovereign drought insurance cover for countries in the IGAD region using the African Risk Capacity (Option 1b).



Source: Authors.

5.3.3.2 Key benefits and challenges

The key benefit of using ARC for a macro-level sovereign insurance scheme in the IGAD region is the relative ease of implementation (Table 22). With ARC Ltd., there is already a specialist index insurance company in place to sell to all eight IGAD country-level governments sovereign risk drought insurance for their pastoral communities immediately. With the new rangeland insurance cNDVI⁵⁴ product, ARC has an IBLI product on offer that specifically targets pastoral rangeland areas. In addition, no ground-level implementation would be required for the ARC approach – this would be left entirely to participating governments. Finally, from a donor perspective, it might also be easier to steer premium financing support through the existing Africa Disaster Risk Financing program to a single established entity such as ARC, rather than through a newly founded program coordination body as for proposed Options 2 and 3.

Key drawbacks, however, include that payouts from ARC would benefit pastoralists less directly and that ARC would compete directly with the existing local private insurance and reinsurance companies and public-private partnership approaches. Under Option 1a, ARC insurance payouts would be provided not to pastoralists but to governments, who would then finance emergency response activities. Such interventions would thus necessarily be slower than direct payouts to pastoralists.⁵⁵ If ARC were to offer macro-level sovereign risk IBLI, this could act as a major disincentive to the existing local IBLI initiatives in countries such as Kenya and Ethiopia and possibly lead to their closure. African and international reinsurers who have supported the IBLI initiatives from inception may be dismayed to have ARC enter the market and compete with their IBLI business, albeit at a sovereign level.⁵⁶ Furthermore it is possible that some governments may reject this approach as it does little to foster local insurance market development and retention of premiums. Table 22 lists benefits and challenges.

For the suggested alternative Option 1b, the modified macro-level cover through ARC, the key benefit is greater speed in payout delivery to pastoralists, but it is unclear whether ARC has the operational capacity to implement

⁵⁴cNDVI performs better than ARC's water requirement satisfaction index or WRSI products in measuring biomass availability in rangelands (Fava et al 2018).

⁵⁵Delays in emergency support financed by ARC payouts have also been witnessed in the past, e.g. in Niger and Senegal in 2014 (ARC 2017).

⁵⁶In background consultations for this report, several international reinsurers expressed their preference for supporting the modified macro-level IBLI approach rather than the macro-level sovereign approach to ensure greater benefits for pastoralists (being pre-registered and in the event of a drought, receiving payouts directly and rapidly into their bank accounts).

it. Participating in such a scheme might require ARC to provide a payout not to the Government but to many thousands of insured pastoralists at the same time directly into their bank accounts, something that ARC has not been set up to do. In addition, ARC would also need to coordinate registration, awareness creation, monitoring and evaluation and other complementary activities that are necessary for micro-level implementation and that require the capacity of reaching out pastoral communities. To resolve this issue, ARC could partner with local service providers on the ground such as such as Agriculture and Climate Risk Enterprise Ltd.,⁵⁷ Pula Advisory Ltd.⁵⁸ or Agent for Inclusive Insurance Development Ltd.⁵⁹ and with organizations with experience of livestock development projects, such as ICPALD and ILRI.

Table 22: Benefits and challenges of a macro-level sovereign drought insurance approach for a regional IGAD IBLI program (Option 1).

Benefits	Challenges
(+) Ease of implementation – ARC Ltd. has an existing sovereign drought insurance product and program for African countries targeting pastoral rangelands.	(-) The delivery of benefits to drought-affected pastoralists would be less direct and slower (as payouts would be made to governments rather than directly to pastoralists).
(+) Enrolling governments as policyholders would be much easier than either having to retail micro-level IBLI or having to pre-register beneficiaries.	(-) Sovereign-level insurance with ARC would disincentivize local insurance and reinsurance market development and might lead to closure of existing programs.
(+) By design, ARC is a financially efficient sovereign risk financing tool, pooling risk at a reinsurance level thereby.	(-) Currently only three of the eight IGAD countries are ARC members. Others would have to join.
(+) There are large, expected cost savings with ARC being the single underwriter for all policies and it being a not-for-profit institution.	(-) It is unclear whether ARC has the operational capacity to provide payouts directly into individual beneficiaries' bank accounts (Option 1b).
(+) For donors, steering premium subsidies through a single entity such as ARC might be easier than for Option 1 or 3.	(-) This approach would not foster development of private commercial micro-level IBLI markets in the IGAD countries.
(+) There is potential to structure insurance as modified macro-level cover, thus enabling direct payouts from ARC to pastoralists (Option 1b).	

Source: Authors.

5.3.4 Domestic insurance market-led approach (Option 2)

5.3.4.1 Key features and options

Option 2 would pursue a dual objective: Protect vulnerable pastoralists owning a minimum number of TLUs through modified macro-level livelihoods protection insurance programs and build viable micro-level IBLI markets.

Option 2 would target two pastoralist population segments. Firstly, vulnerable low-income pastoralists who own a minimum number of TLUs, enabling them to maintain their livelihoods (e.g. 5 TLUs). IBLI would aim to help them keep this minimum number of animals alive during drought stress. For these pastoralists, public sector financial resources would be used to purchase insurance on their behalf under the modified macro-level approach adopted by KLIP and SIPE. Over time, as these vulnerable pastoralists learn about the benefits of insurance and hopefully become wealthier and more drought resilient, the objective would be to graduate them off fully funded IBLI to partially subsidized micro-level IBLI. This would enable governments to then bring new (replacement) vulnerable pastoralists into the modified macro-level fully subsidized program. Secondly, Option 2 would simultaneously target relatively better-off pastoralists who can afford to contribute a certain share of premium payments themselves and promote micro-level IBLI backed by partial premium subsidies (e.g. 50% subsidy) to these pastoralists.

⁵⁷ Agriculture and Climate Risk Enterprise Ltd, which evolved from the Kilimo Salama project, was established in 2009 and funded by the Syngenta Foundation and the Global Index Insurance Facility (GIIF). Agriculture and Climate Risk Enterprise Ltd. has extensive operational experience in Kenya and Uganda and in other African countries in east and west and central Africa. <https://acreafrica.com/about-us/>

⁵⁸ Pula Advisors, HQ Nairobi, with extensive experience in crop AYII and crop WII in East Africa, West Africa and southern African countries. <https://www.pula-advisors.com/about/>

⁵⁹ Agent for Inclusive Insurance Development was formed in 2020 by the former Chief Executive Officer of Takaful Insurance Company.

To achieve this, the dual approach of establishing a modified macro-level IBLI program alongside a micro-level IBLI program taken in Kenya and Ethiopia would be refined and gradually expanded to other countries. Both approaches would be started alongside each other. The modified macro-level and the micro-level program would be operated together in order to maximize mutual benefits (see Section 4.3.2). Where and when appropriate, this approach would be expanded to additional countries. As countries have different levels of development of their domestic insurance markets, different countries would join the initiative at different times.

Besides Kenya and Ethiopia, additional countries could join the implementation of market-based IBLI solutions in a first phase, including the following.

- **Uganda**, where the Uganda Agricultural Insurance Scheme⁶⁰ has now been operational for three full years under a public-private partnership, whereby a pool of 11 co-insurance companies underwrite crop and livestock micro-level insurance cover and the government provides premium subsidy support to farmers to make insurance more affordable and accessible.⁶¹ In addition, the Government of Uganda has confirmed its firm intention under any future IGAD regional IBLI initiative to introduce a modified macro-level social protection scheme modelled on KLIP in the livestock corridor of Uganda. Under the Uganda Agricultural Insurance Scheme, pool co-insurers now have the operating systems and procedures in place to be able to consider offering micro-level IBLI in parallel to any government-purchased macro-level social protection IBLI program.
- **Somalia**, where WBG and ILRI have already conducted a feasibility study for the introduction of IBLI (WBG and ILRI 2019) on behalf of the government. Three insurance companies, Takaful Insurance of Africa (which has major experience in the design of implementation of micro-level IBLI and modified macro-level KLIP in Kenya), FISO Takaful Insurance and Horn of Africa Insurance, have indicated their interest in supporting an IGAD regional IBLI initiative in Somalia. Given the current lack of insurance distribution networks in Somalia, the realistic entry point would be to start with either a sovereign risk approach or modified macro-level social protection IBLI and to develop micro-level IBLI in a future phase.
- **Sudan**, where the public-sector Shiekan Insurance Company has many years of experience in implementing indemnity-based livestock insurance and where there are also a further four or five private insurance companies with experience in underwriting micro-level crop and livestock insurance. The government has expressed its interest in joining a regional IGAD initiative and ILRI has launched a feasibility study with Syngenta Foundation to be finalized in 2021. In principle, Sudan should be able to develop and implement both modified macro-level and micro-level IBLI programs in parallel.

The three remaining IGAD countries, Djibouti, Eritrea and South Sudan, currently lack insurance infrastructure to implement IBLI and it may be necessary to delay their joining an IGAD regional initiative until a second phase.

Compared to other countries, the pastoral sector is relatively small in Djibouti in absolute terms and any IBLI program will likely be small. A recent WBG feasibility study for IBLI in Djibouti also showed that there is limited interest from insurers and the government (WBG 2020b). In Eritrea and South Sudan, pastoralists are highly vulnerable to drought but the insurance markets are extremely underdeveloped. The lack of rural insurance infrastructure in Eritrea and South Sudan means that voluntary micro-level IBLI would not be a cost-effective option currently; however, a macro-level social protection cover could possibly be considered.⁶²

Under the further development of an existing local market-based approach the following cost-sharing considerations may apply:

- **Sharing of the costs of IBLI product design.** An international remote sensing-index insurance specialist or regional agency could be contracted to design and rate a standardized IBLI product(s) for all eight IGAD countries.
- **Appointing of a single IGAD regional calculation agent** to monitor the index values and to be responsible for end-of-season index calculation to verify if payouts are due in any of the participating countries.

⁶⁰ See Uganda country annex in Volume II to this report which contains further details of the Uganda Agricultural Insurance Scheme.

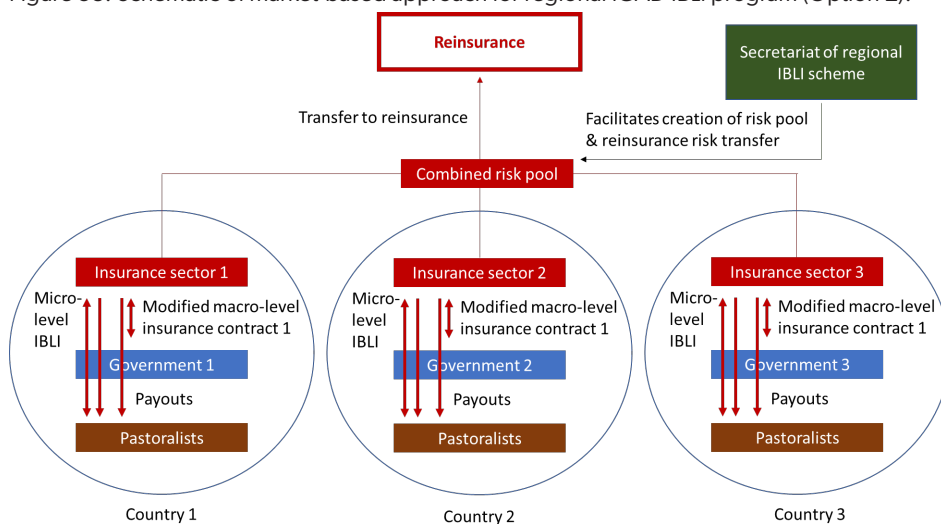
⁶¹ Premium subsidies are differentiated: smallholder farmers are eligible for 50% premium subsidies, large farmers for 30% premium subsidies and subsidies are as high as 80% of disadvantaged farmers located in high-risk zones (WBG 2019d).

⁶² See Volume II to this report for further details on each of the countries.

- **Appointing a single entity to design IBLI awareness creation and educational and training materials** and to then provide training on the ground in each country.
- **Pooling of IBLI reinsurance** either by appointing a regional reinsurer who is licenced to operate in the eight IGAD countries, or by agreement to appoint a specialist international reinsurance broker to design suitable reinsurance programs that local insurers could elect to join as per their interest.
- **Development of a unique digital IBLI sales and underwriting platform for operation under licence in the eight IGAD countries.**

The different market-based schemes in each of the participating countries would pool their risk at the regional level. The pooled insurance policies from the different participating countries would be transferred together – in whole or in part – to reinsurance. Reinsurers could be existing African reinsurers such as Africa Re or ZEP-RE or international ones such as Swiss Re. It is also conceivable that ARC act as a reinsurer, pooling risk and retroceding the excess liability to local and international reinsurers. In consultation with the ARC team, ARC confirmed its interest in pursuing new lines of business, including reinsurance.⁶³ Reinsurance pooling through ARC, Africa Re or ZEP-RE could be conducted on a voluntary basis such that existing IBLI reinsurers in Kenya and Ethiopia could continue to support and lead the IBLI program in a single country or to share in the wider IBLI regional pool where they would benefit from risk diversification. Figure 38 shows schematically what Option 2 could look like.

Figure 38: Schematic of market-based approach for regional IGAD IBLI program (Option 2).



Source: Authors.

Donors and national governments could assist in the roll-out and scale-up of IBLI by providing financial support to the above regional shared activities. A major consideration will be donor and government support to premium financing both on the modified macro-level and micro-level IBLI programs. Other areas for government and donor support include product design and rating, establishing electronic registration systems of pastoralists and their livestock, facilitating financial inclusion and access to mobile phone technology and awareness creation and education and training.

5.3.4.2 Key benefits and challenges

The key benefits of this approach include support to the development of local insurance markets, using existing program structures, and providing incentives for additional private sector investments. By using local underwriters, local insurance markets would be strengthened. In countries with existing micro-level and modified macro-level IBLI programs, i.e. Ethiopia and Kenya, these pre-existing structures would be expanded. And by working through local insurance companies, insurers can also be incentivized to invest in operations, systems and processes, thus leveraging additional finance.

⁶³It is unclear at this stage to what extent ARC would have the capacity to reinsure policies from different countries at the regional level as there could be legal/regulatory challenges on the ARC Ltd. side. In initial consultations with the ARC team, these legal concerns could not be answered.

In addition, the gradual approach to building on existing IBLI markets in each IGAD country would allow maximum flexibility to local governments and public and private sector insurers. Such flexibility in the design and structuring of a regional IBLI approach is likely to be important in order to reflect the different legal and regulatory basis of insurance across the eight countries (ranging from UK-based insurance law to Sharia law), the different levels of insurance market development and presence or absence of existing agricultural insurance and IBLI markets. It should be recognized that while a regional IBLI approach in all eight countries sounds attractive for the reasons set out above, in practice it may be very difficult to scale-up both in existing and in new countries that have no previous experience with implementing IBLI. While it should be feasible to obtain agreement by IGAD countries on regional cooperation in areas such as IBLI product design and rating, appointing a single remote sensing specialist and appointing an index insurance specialist to monitor IBLI performance and to act as a regional calculation agent, it may in practice be very difficult to establish risk pooling/pooled reinsurance purchasing at a regional level to take advantage of risk diversification across the eight countries.

Key drawbacks of this approach include that some IGAD countries would initially be excluded, that it might be challenging to pool insurance programs of local insurers at the regional level, and that the program might be difficult to administer. Djibouti, Eritrea and South Sudan might take many years until their respective local insurance markets are ready to underwrite national IBLI programs. In addition, it might prove difficult to achieve agreement among local insurers from different countries to pool their national policies at the regional level for reinsurance transfer, given differing reinsurance strategies and different national regulatory requirements (e.g. compulsory reinsurance cessions). Finally, it could be challenging for development partners to coordinate technical assistance and premium financing support to up to eight IGAD governments and potentially many participating insurance companies – for this, an appropriate regional coordinating body would need to be established (Section 5.4.1). Table 23 lists the expected benefits and challenges of a market-based IBLI approach for the IGAD region.

Table 23: Benefits and challenges of the domestic markets-led option for regional IGAD IBLI program (Option 2).

Benefits	Challenges
(+) Support to local insurance market capacity building and development of index insurance.	(-) Countries with low insurance market development may take many years to reach a point where their industries are ready to participate in the regional IBLI program.
(+) Build on and scale up existing IBLI programs.	(-) It may not be easy to design a regional IBLI reinsurance program due to different strategies of insurers in each county, different national reinsurance legislations and existing reinsurance arrangements.
(+) Leveraging additional private sector investments in market development.	(-) Beneficiary registration across a set of countries might prove challenging and will require significant support from in-country partners.
(+) Phased approach to IBLI scale-up that recognizes regional/country-level differences in market development.	(-) It is more difficult for donors/international development banks to channel premium finance funds through up to eight national-level IBLI programs without a single regional entity to administer and implement the program.
(+) Allows maximum flexibility at country level in the design and implementation of a regional IBLI program.	(-) Under this relatively loose local-market-based approach, it may be more difficult to make sure that awareness creation and monitoring and evaluation activities are properly executed and funded to the same standards across all eight countries.

Source: Authors

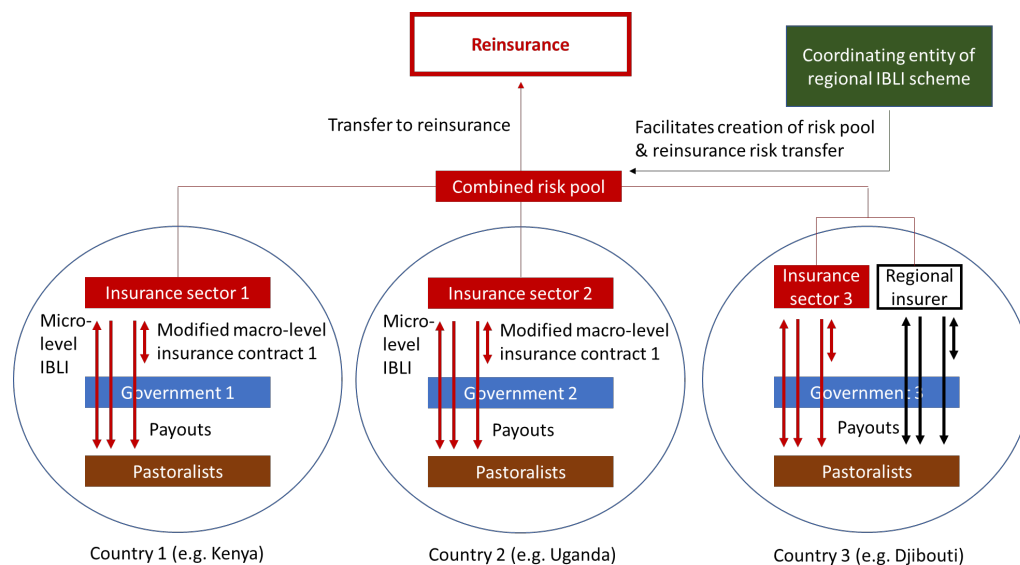
5.3.5 Hybrid of local market-led approach and a regional insurer (Option 3)

5.3.5.1 Key features and options

Option 3 would pursue the same objectives and structure as for Option 2, with the difference that a regional insurer would support in countries where local insurance market development is too low. As for Option 2, Option 3 would aim to (i) protect vulnerable low-income pastoralists owning a minimum number of TLUs through the modified macro-level livelihoods protection approach and (ii) build micro-level domestic IBLI markets targeting relatively better-off pastoralists. The proposed hybrid structure would address the key challenge identified for Option 2 – the lack of readiness of some insurance markets to underwrite IBLI.

Under a hybrid model, some countries would operate as indicated under Option 2; in others, a regional insurer would support local markets. In countries with local insurance companies actively involved in underwriting micro-level or modified macro-level IBLI (Kenya and Ethiopia), these would continue to underwrite such cover. Other countries with established insurance sectors (e.g. Somalia, Sudan and Uganda) could possibly join them with newly set up market-based IBLI programs. Mechanisms could be put in place to promote best practice and standardization of the design and implementation of IBLI products and programs in these countries. Meanwhile, in the remaining countries (e.g. Djibouti, Eritrea and South Sudan), local insurance companies could be supported by a regional insurer such as ARC, which would co-insure together with them respective IBLI programs. As for Option 2, ARC, or Africa Re or ZEP-RE could also act as a regional reinsurer. Figure 39 presents schematically what a hybrid regional IBLI approach could like for IGAD countries.

Figure 39: Schematic of regional IBLI scheme for IGAD countries under hybrid option (Option 3).



Source: Authors.

Potential candidates to act as regional insurer could e.g. be ARC, African Trade Insurance, Africa Re or ZEP-RE. ARC or African Trade Insurance could potentially bring in insurance capacity from the region. Questions of their operational capacity and potential legal barriers were not explored further for the purposes of this report. In addition, local reinsurers such as Africa Re or ZEP-RE have many years of experience supporting the crop and livestock index insurance programs in Kenya and Ethiopia and would also be very well placed to support the reinsurance program for a regional IBLI initiative. These reinsurers are licenced to operate as reinsurers in the IGAD region and therefore there should be no barriers to their support at the reinsurance level. However, as reinsurers, they would require a local insurer or fronting entity in each of the eight IGAD countries in order to be able to provide reinsurance capacity support.

5.3.5.2 Key benefits and challenges

Most of the benefits and challenges of the hybrid model (Option 3) would be the same as for a local domestic insurance market-based model (Option 2). The hybrid option would essentially take the same approach as the market-based approach, with the difference that external insurance capacity would be invited to balance out insurance capacity gaps in selected countries. All other features would stay the same.

The key benefit of a hybrid approach would be that it might enable some countries to join a regional IBLI initiative earlier. All three countries with limited insurance market development – Djibouti, Eritrea and South Sudan – have expressed their interest in joining a regional IBLI initiative. Should the program wish to enable their joining, pursuing a hybrid structure might be a viable option.

The key challenge of a hybrid approach is to identify a suitable regional insurer: ARC Ltd. appears the most obvious option but may not have the legal or operational capacity to underwrite direct IBLI policies to individual pastoralists in local markets. At this stage, only three of eight IGAD countries are ARC member states via a memorandum of understanding signed with ARC, enabling ARC to operate as an insurer in these countries. In order to be able to operate in other countries, they would have to sign the memorandum of understanding. In addition, it is unclear whether ARC Ltd. has the operational capacity to co-insure IBLI policies at the national level. On the one hand, this pertains to the ability to provide payouts to individual pastoralists. On the other hand, for micro-level IBLI sales it is clear that today ARC Ltd. does not have the staff, systems or procedures to support IBLI operations on the ground at a micro-retail level. One solution for them could be to build on partnerships with a specialist insurance field services provider such as Agriculture and Climate Risk Enterprise Ltd., Agent for Inclusive Insurance Development Ltd., Pula Advisory Ltd. and with organizations with experience on implementing livestock development projects, such as ICPALD or IRLI. Finally, there are also questions whether ARC Ltd. would be able to both co-insure at national levels with local insurers and act as a reinsurer of the pooled portfolio at the same time, should this be desired. Table 24 lists the expected benefits and challenges of the proposed hybrid approach.

Table 24: Benefits and challenges of a hybrid approach (Option 3).

Benefits	Challenges
(+) Compared to Option 2, enabling countries with weaker insurance market development to participate in a regional market-based IBLI approach.	(-) Unclear whether ARC has legal capacity to co-insure at national level – both in ARC-member and ARC-non-member countries.
(+) Same benefits as for Option 2 (see Table 23).	(-) Questions around operational capacity of ARC to underwrite IBLI at national level (modified macro-level and micro-level).
	(-) Questions around ARC capacity to act as regional reinsurer when it already acts as co-insurer at national levels.
	(-) All other challenges as for Option 2 (see Table 23).

Source: Authors.

5.4 Operational functions and stakeholder roles

This section presents the required functions that would have to be covered for any regional IBLI initiative and what stakeholders could be suited to cover them. Table 25 gives an overview of the needed function and potential stakeholders to conduct them and further discussion is presented in the sub-sections below.

Table 25: Potential institutional roles for key operational functions of a regional IBLI initiative.

Function	Description	Potentially responsible in regional IBLI initiative
(1) Overall coordination	Programme design; provide overarching policy guidance; manage overall program; facilitate regional risk pooling; administer potential donor support.	1. Multi-stakeholder board. 2. Technical secretariat (e.g. staffed by IGAD, a specialist service provider, ARC or WFP).
(2) Technical design	Design institutional framework; design insurance product(s); design capacity building and awareness raising strategy; design monitoring and evaluation framework; stakeholder onboarding.	Technical secretariat with sign-off by multi-stakeholder board, as indicated under (1).
(3) Insurance and reinsurance underwriting	Underwrite insurance; regional risk pooling of insurance risk; underwrite reinsurance.	Dependant on overall program structure – roles for local, regional and international reinsurers.
(4) Product distribution/beneficiary registration	Set procedures for macro-level IBLI targeting and registration. For micro-level IBLI, identify low-cost distribution systems; design a regional livestock registration database system compatible with existing local registration systems.	National and regional governments; on-the-ground implementers working with pastoralists; insurers.

Function	Description	Potentially responsible in regional IBLI initiative
(5) Pastoralist capacity building and awareness creation	Design IBLI training and awareness-raising materials for meso- and macro-level IBLI cover; outreach to pastoralists.	E.g. national and regional governments; on-the-ground implementers working with pastoralists; insurers; ILRI.
(6) Calculation agent	Collect, process and report index data on time; determine insurance payouts.	E.g. IGAD Climate Prediction and Application Centre; regional specialist service provider; international service provider or university.
(7) Claims handling	Pay claims into pastoralists' bank accounts.	Insurers
(8) Monitoring and evaluation	Monitor and assess impact; conduct research studies and surveys.	E.g. ICPALD; ILRI; universities.

Source: Authors.

5.4.1 Overall coordination

Any intended regional IBLI program will be very complex in nature and should be prepared and coordinated under strong leadership by a multi-stakeholder board. The existing IBLI programs, KLIP and SIPE at the modified macro-level, as well as the micro-level programs in Kenya and Ethiopia, are multifaceted programs requiring collaboration across a series of different public and private stakeholders, with many different roles and responsibilities, complicated technical challenges and various political challenges. For any regional program, given the participation of more countries, stakeholders and geographies, it is likely that these complexities will be higher. At the centre of any regional program, countries may thus consider establishing a board comprising country representatives, potential donors, civil society organizations and technical implementers. Building on the experience of other multi-country donor-funded initiatives – such as the Global Partnership for Education – any governance structure should ensure appropriate representation, not only by those providing resources but also by those receiving them.

The board would sit at the centre of a regional IBLI initiative and provide overall strategic guidance and political leadership. Policy guidance and convening power will be needed to provide overall policy direction to participating governments, facilitate government buy-in and coordination, and ensure insurance regulatory policy coherence across borders. In order to be able to steer the overall agenda effectively, the board would require political backing by the highest governmental levels by participating countries.

A technical secretariat could be tasked with the technical implementation of board decisions. Despite the many participating parties, there will ideally be a single technical entity ultimately responsible for implementing the entire program. The role of the secretariat would ideally be taken on by an existing body, so as to leverage existing expertise and make use of economies of scale.

The secretariat will need to (i) manage the program, (ii) potentially support insurers in pooling IBLI policies at the regional level before transferring them to reinsurance, and (iii) potentially administer donor support.

1. **Programme management** will comprise operational planning of processes and operations, building relationships with partners contributing to the program, agreeing on work programs with partners, following up on them, etc. Ideally, the responsible entity would also take on parts of strategic planning and design of the program. An entity will be needed with plenty of experience in operating complex and large international programs; experience and extensive networks in the region; experience with structuring and operationalizing large insurance programs; and experience working on the drought resilience agenda.

2. **For pooling IBLI policies at the regional level**, the needed activities will depend on the overall reinsurance structure chosen (e.g. for a purely macro-level sovereign risk financing approach, no regional pooling will be required from the secretariat, as the appointed captive, e.g. ARC, would assume this responsibility). However, under a local market-insurer-based approach in each country, the secretariat would be needed to facilitate the dialogue across insurance companies in multiple countries for them to agree on risk pooling and reinsurance terms, potentially hire a reinsurance broker to obtain cost-effective reinsurance, and administer the process between insurers and reinsurers to conclude the reinsurance transaction.
3. **Potentially administering donor support** could entail acting as a recipient of any financial donor support and forward it accordingly to governments and/or insurance companies as per the agreed financing framework.

Potential candidates to take on the secretariat role include, e.g., the IGAD Secretariat, a specialist service provider, ARC or WFP. The IGAD Secretariat or ICPALD could be an effective regional solution. Another option could be a specialist service provider in the form of, e.g., Agriculture and Climate Risk Enterprise Ltd, Pula Advisory Ltd. or Agent for Inclusive Insurance Development Ltd. (all based in Nairobi) or an international development consultancy. ARC could also be a natural choice as an African government-owned institution that works on drought insurance across Africa, but there are potential capacity challenges and conflicts of interest. Given WFP's strong experience with drought risk financing in the Horn of Africa, WFP might also be an option. These various options could also be combined (e.g. IGAD working together with a specialist service provider). These first ideas are shown in Table 26 with their respective expected benefits and challenges.

Table 26: Benefits and challenges of different bodies taking the role of a technical secretariat to a regional IBLI scheme.

Structuring option for technical secretariat	Benefits	Challenges
IGAD Secretariat or IGAD Centre for Pastoral Areas and Livestock Development	(+) Government-owned. (+) Extensive networks in the region.	(-) No technical insurance expertise or experience. (-) Limited experience with managing programs of the envisaged size. Capacity constraints.
Specialist service provider	(+) Effective way to source technical expertise.	(-) Potential coordination issues between IGAD/service provider; would require careful setup of a long-term agreement, e.g. in the form of a service provider unit housed at IGAD. (-) Might be unsuited or inexperienced in dealing with intergovernmental challenges.
African Risk Capacity (ARC)	(+) Government owned. (+) Insurance expertise. (+) Experience with KLIP as underwriting reinsurer for the current 2020/21 season. (+) Interest of ARC to expand alternative activities to 'traditional' Africa (+) RiskView-based model. (+) Interest of ARC to expand activities in East African. (+) ARC have confirmed interest in this potential setup.	(-) Management role of a new regional program would be a new role for ARC and it is unclear to what extent ARC the required experience. (-) Should ARC become an underwriter for the program too, there could be conflicts of interest with managing role. (-) Only three of the eight IGAD countries (Djibouti, Kenya and Sudan) have signed the ARC memorandum of understanding so far.
World Food Programme	(+) Strong experience with structuring drought risk financing programs, such as the R4 program, in different countries in East Africa.	(-) Key mandate is supporting food security, not building insurance markets.

Source: Authors.

Government institutions of participating countries would be best placed to support individual functions.

Governments are best placed to support individual activities under a regional program. Where relevant, these are outlined below.

5.4.2 Technical design

During the preparation phase, the building blocks of the program will have to be designed. These include the following.

- **Scope and objectives.** The overarching parameters of the program will have to be finalized. While some are clear already (e.g. targeting pastoralists, use of IBLI, focus on drought), others would need to be set on the basis of stakeholder engagement and a more in-depth review of the local context. This includes confirmation of the specific objectives of the regional initiative; the overall program features including insurance/reinsurance structure (see previous section); target population and region; the scale (targeted number of insured, number of regions); the timeline (planned expansion); detailed funding and budgetary requirements; and sustainability strategy.
- **Institutional framework.** Private and public sector stakeholders will have to be identified and their respective roles defined; the most suitable market structure will have to be determined (e.g. whether insurers should collaborate through a co-insurance pool); and the suitability of policy and regulatory frameworks across participating IGAD countries will have to be ensured.
- **Insurance product design and rating.** An insurance product that is customized for the specific agro-ecological and socio-economic context is essential for effective implementation of any scheme. The IBLI product that is already being used in the Kenyan and Ethiopian programs could be an appropriate starting point but it might require adjusting for the regional context. Preparatory steps include agreeing insurance parameters (sum insured, payout triggers, unit areas of insurance, etc); developing actuarial ratings; conducting rangelands and forage reviews where needed; developing protocols for accuracy assessment with ground-truth data (if available) and/or local stakeholders' engagement; capacity assessment and initial development of involved stakeholders on index-insurance principles and product design; design of tools for index monitoring and claims calculation, as well as manuals as needed; and institutional capacity needs assessment in the management and provision of agro-meteorological data and extension services.
- **Capacity building and awareness-raising strategy.** For a potential micro-level IBLI program, informed demand is the cornerstone of long-term insurance demand and impact of the insurance product. For a potential modified macro-level program, building the understanding of policyholders of the program enables them to change behaviour in anticipation of the potential payouts. Location-specific extension materials need to be created and an extension plan needs to be developed in order to generate informed demand for the product.
- **Monitoring, evaluation and learning framework.** Establishing a rigorous framework for monitoring, evaluation and learning would be key to enabling constant improvement and broader learning from program impacts.

The technical secretariat would play a key role on technical design but should be aided by suitable technical experts. For this, experienced technical institutions such as ILRI could provide a supportive function.

One option to consider is the establishment of a permanent technical support unit to support the development of and implementation of IBLI products and programs in the IGAD region and to monitor that quality standards are met. Such an entity could either be embedded in the technical secretariat or housed at an institution such as ICPALD, the IGAD Climate Prediction and Application Centre or ILRI. The technical support unit could comprise, for example, a small team of IBLI insurance specialists backed by risk modelling and actuarial skills, an index insurance media and training specialist, a web platform database specialist, an insurance and reinsurance specialist, and a livestock/pastoral livelihoods development specialist. The technical support unit could work closely with one or more international remote sensing specialists (e.g. Vandersat, CelsiusPro, VITO,⁶⁴ VAM-WFP, University of Twente, University of Natural Resources and Life Sciences, Vienna or the International Research Institute for Climate and Society)⁶⁵ and the national meteorological agencies in each country. The technical support unit would be mandated to work on IBLI product design and rating; design of awareness and training materials and provision of training of training programs in each IGAD country; digital distribution systems; and capacity building and training to government departments, IBLI insurers and meteorological agencies in each country.

⁶⁴Vlaamse Instelling voor Technologisch Onderzoek (Flemish Institute for Technological Research).

⁶⁵Earth Institute, Columbia State University.

5.4.3 Insurance and reinsurance underwriting

Depending on which overall structure would be chosen for the implementation of the program, different entities would be responsible for underwriting the IBLI product.

- For Option 1, macro-level sovereign risk IBLI, one regional insurer would underwrite one policy for each participating country. ARC would be the natural choice for this, given that ARC has an ongoing sovereign drought risk program and has recently developed a new rangelands product to cover pastoralist areas. ARC is reinsured by a consortium of international reinsurers.
- For Option 2, the local insurance sector in each participating country would be responsible for underwriting both the modified macro-level IBLI product and the micro-level product. Local insurers could also consider to form pools of agricultural insurers in each country to underwrite IBLI as is the case with KLIP in Kenya, SIPE in Ethiopia and the Uganda Agricultural Insurance Scheme in Uganda. The policies would then be pooled at the regional level and transferred to the international reinsurance market. For the reinsurance transaction, either regional reinsurers could be chosen such as ZEP-RE, Africa Re or ARC or an international reinsurance broker could be engaged to access cost-effective international reinsurance.
- For Option 3, the local insurance sector in each participating country would underwrite the policies where it has the capacity and appetite to do so (as for Option 2). In countries where it does not, a regional insurer would co-insure alongside local insurers. This regional insurer could, for example, be ARC, African Trade Insurance, ZEP-RE, Africa Re or another African reinsurer. Reinsurance would again be pooled at the regional level and transferred to international reinsurance markets.

5.4.4 Beneficiary registration/product distribution

How pastoralists will be enrolled in the program will need to be decided, ideally building on existing infrastructure.

- **For a sovereign-level insurance scheme (Option 1a)**, the selection of benefiting pastoralists is left to the government receiving an ARC insurance payout. While the selection of beneficiaries can thus be left to the last minute when the payout is actually received, it is recommendable to do as much as possible of the targeting and selection process ahead of time. Such created automaticity can help speed up the financed response activities and avoid politicization (Clarke and Dercon 2016). It is also best practice for ARC payouts to be implemented through scaling up of existing national cash transfer programs, as this can reduce delay and enhance cost-effectiveness (Clarke and Hill 2013). For such intended scale-ups, potential beneficiaries can also be selected in advance as is the case for the Kenyan HSNP (Lung 2020b).
- **For a modified macro-level IBLI livelihoods protection scheme (Options 1b, 2 and 3)**, as considered under the regional structural Options 1b, 2 and 3, designers need to consider how beneficiaries will be identified and included in the program. As background research for this study has shown, most of the IGAD countries already operate some kind of beneficiary registry through existing social protection cash transfer programs. Relevant ones include WFP SCOPE databases across all IGAD countries; in Djibouti a WBG-supported safety net rural household register; in Ethiopia, the beneficiary registry of the national Productive Safety Net Program; in Kenya, the national Single Registry for Social Protection; and in Uganda, the database of the Northern Ugandan Social Action Fund program.⁶⁶ Wherever possible, registration of beneficiaries for the modified macro-level cover should use data from these existing registries. Targeting of program beneficiaries should be done according to clear criteria (e.g. minimum TLU holdings of five) to ensure that the program works towards achieving its objectives. There is a clear role for IGAD governments that are purchasing modified macro-level IBLI cover to support the process of beneficiary identification and registration, potentially working with community leaders and pastoral clan leaders, as well as local and international NGOs.
- **For a micro-level IBLI scheme (Options 2 and 3)**, effective distribution channels need to be identified. As discussed in Section 4.3.1, any new program would need to implement significant changes to the micro-level IBLI distribution practices used in Kenya and Ethiopia in order to reduce the administrative and overhead costs associated with voluntary sales to individual pastoralists. Micro-level distribution should be led by the private sector, given insurers' existing distribution networks and the impact this can have on strengthening sustainable market structures.

⁶⁶ Further details are provided in Volume II of this report.

It should be noted that both registration of beneficiaries of a modified macro-level IBLI program and/or distribution of micro-level IBLI policies are expected to pose major challenges in the implementation of any regional program. Ideas for potential solutions are discussed in sections 5.3.3 and 5.5.5.

The database on policyholders should be kept in digital form for ease of use and accountability. Experience from the early days of KLIP has shown that failure to rely on digital solutions for beneficiary registration and claims handling can lead to delays and mistakes. There is a clear rationale for using electronic means to record the data of those enrolled in the program: it makes handling easier, increases transparency and reduces any mistakes made. Great recent strides in terms of beneficiary registry digitalization have been made already in some IGAD countries, for example through the digitalization of the Single Registry in Kenya. As new digital solutions, including for policyholder enrolment (see Section 5.2), emerge, digital record keeping should be facilitated further.

Making ownership of a bank account, ideally one for mobile banking, a prerequisite for policyholders to participate in the **program should be considered.** Experience from previous IBLI programs has demonstrated the critical importance of both (i) enabling insurers to provide payout directly into policyholder bank accounts rather than relying on sub-regional public authorities to manage payouts and (ii) relying on mobile technologies for reaching often remote pastoral communities. Programme designers should build on these lessons and ensure that policyholders own bank accounts. This will also encourage financial inclusion across the region. For beneficiaries of a modified macro-level scheme, helping them to set up bank accounts at registration could also be a means to further financial inclusion (see also Section 5.5.5).

5.4.5 Pastoralist capacity building and awareness creation

Building the financial literacy of pastoralists and their awareness of the program will be fundamental to program success. Understanding how IBLI works will both enable policyholders to fully harness its benefits and to build trust in the mechanism. Outreach activities providing trainings will thus be key to any program design. These efforts will be complemented by market development activities to support uptake, including development and application of innovative digital extension and learning methods. Activities include designing of job aids for agents for marketing of the product to potential clients (pocket-books, cartoon books, information cards) and support the implementation of marketing campaigns; developing mobile learning tools for refresher courses for agents delivering the product and for client awareness; creating radio content for interactive talk shows, creating awareness before and during the sales periods and for awareness-raising campaigns; developing SMS and interactive voice response content (this could include setting up of a toll-free number where clients can call) for remote awareness-creation both for agents as well as clients (these will include existing clients as well as prospective clients).

While there is a significant role to play for underwriters, other institutions that work with pastoralists on the ground can support training and awareness building activities. These include national and regional governments via extension services, pastoralist associations, product bundling partners (e.g. banks or veterinary service providers), NGOs and other development partners. Different respondents to the expert questionnaires have indicated their interest in supporting pastoralist capacity building and awareness-creation activities on IBLI, including ministries of agriculture, private sector service providers, NGOs, FAO, WFP and USAID.

5.4.6 Calculation agent

Under any regional initiative, private and public stakeholders will need to appoint a third-party specialist entity to act as an independent calculation agent. The roles of the calculation agent include obtaining the required data on a regular basis (for IBLI: NDVI data from the NASA MODIS satellite for all insurance units every dekad/month from the

US Geological Survey);⁶⁷ processing and standardizing the data according to the livestock insurance contract terms; determining insurance payouts in accordance with the livestock insurance contract parameters; monthly and end-of-season and end-of-year reporting to key stakeholders; and advising on a back-up satellite NDVI source in the event the primary data source breaks down.

This is a very important task that must be conducted by an independent specialist entity. It is recommended that the identification and selection of the calculation agent should be carried out by the secretariat mandated with coordinating the program in agreement with underwriting insurance companies and that insurance supervisors from the region are involved in this process to ensure compliance with insurance regulations. It is also likely that the lead reinsurer will want to approve the identified calculation agent.

Entities that could potentially provide calculation agent services for a regional IBLI initiative include the IGAD Climate Prediction and Application Centre, Agent for Inclusive Insurance Development Ltd, remote sensing-specialized institutions or international organizations providing data services, such as the EU Joint Research Centre. The IGAD Climate Prediction and Application Centre is a regional specialist providing weather services. One challenge could be, however, that as an IGAD institution it is owned by governments in the region and may thus not be acceptable as a calculation agent to insurers due to potential conflicts of interest. The newly founded Agent for Inclusive Insurance Development Ltd. is a private technical insurance service provider under the leadership of the former Chief Executive Officer of Takaful Insurance of Africa with plenty of experience underwriting and working with IBLI in Kenya, although with no dedicated weather data expertise. Potentially suitable service providers could include the Regional Centre for Mapping of Resources for Development in Kenya, Vandersat in the Netherlands, VITO in Belgium, Sarmap in Switzerland, or Celsius-Pro in Switzerland. In addition, there are academic institutions who provide remote sensing data services, such as the University of Twente and BOKU University, who have been involved in IBLI and disaster risk financing programs in Kenya and Ethiopia, as well as the Teledetection Laboratory of the University of Valladolid, which acts as the calculation agent for Spain's Agroseguro pasture NDVI insurance program. Finally, institutions such as the EU Joint Research Centre, which has already developed an early warning system (Anomaly hot Spots of Agricultural Production) based on satellite data, could be also considered.

5.4.7 Claims handling

Experience shows that the private sector is best placed to handle claims. When a claims event has been determined by the calculation agent, affected policyholders must receive an insurance payout. For efficiency purposes, wherever possible, any potential payout should be paid by the insurer(s) directly into policyholders' respective bank accounts, rather than to governments that would have to forward the resources accordingly. For claims payments, the policyholder banking data provided during program enrolment is used.

5.4.8 Monitoring, evaluation and learning

A rigorous framework for monitoring, evaluation and learning should be put in place. This will include regular monitoring of program operational efficiency and impacts on drought resilience building of policyholders, as well as of their stabilization of consumption and incomes. Building on the experience from the IBLI programs in Kenya and Ethiopia, the minimum activities for this would include implementing a mid-term and final household survey for impact evaluation (including cross-cutting issues such as influence on IBLI of gender and youth); evaluation study of the applied delivery channels, including agent performance and tracking; a dedicated survey after payouts to understand the use and value of payouts for pastoral communities; a client satisfaction survey (product quality and efficiency in delivery mechanisms); and assessments of cross-cutting issues such as gender and youth.

⁶⁷MODIS NDVI C6 data at a 250 m x 250 m resolution, available since July 2002 and collected by the Moderate Resolution Imaging Spectroradiometer (MODIS) flown on board NASA's Aqua satellite. The daily data are transformed into 10-day composites by the Earth Resources Observation Systems (EROS) Data Centre of the US Geological Survey.

The monitoring, evaluation and learning framework could be implemented via a specialist entity and through university partnerships. An experienced knowledge partner might be best placed to ensure high-quality implementation of monitoring, evaluation and learning activities. In the IGAD region, this role could, for example, be taken on by regional research institutions such as ILRI or ICPALD. For selected assignments, qualified academic researchers could be brought in, either from the region or international institutions.

5.5 Applying lessons learned from previous IBLI programs

This sub-section discusses how some of the lessons learned from the existing IBLI programs in Kenya and Ethiopia could be applied as part of a new regional IBLI program.

5.5.1 Lesson learned 1: Operate modified macro-level program together with micro-level program

In Kenya and Ethiopia, the modified macro-level and the micro-level IBLI programs have been operated largely in isolation although there are major potential benefits of creating closer linkages between them. When operated together, a modified macro-level and a micro-level IBLI scheme can support each other and thus boost overall scale. This has been discussed in more detail in Section 4.3. The following outlines how such linkages could be created under a new regional program. As only Options 2 and 3 include both modified macro-level and micro-level schemes, the presented suggestions apply only to these options.

First, the contract duration of modified macro-level IBLI can be structured to support micro-level sales. One challenge particularly seen in the Kenya example was that under the annual tender contracts with the Government of Kenya, insurers tended to invest too little in a durable and effective micro-level retail distribution networks in remote pastoralist regions, thus hampering sales and scale-up. One challenge was that the duration of modified macro-level IBLI contracts (for which the underwriters are the same) was too short. Only being one year, they created significant uncertainty for underwriters who could not know whether the contract would be renewed after one year. Increasing that contract duration can increase certainty and create a longer planning horizon for them. This thus created business certainty could in turn also help boost the (expensive and time-intensive) investments in retail infrastructure on the micro-level side. As a result of this consideration, for 2020/21 the Government of Kenya has also issued a three-year contract to KLIP pool co-insurers. Should policymakers opt for Option 2 or 3, they should thus consider doing the same and ensuring that modified macro-level contracts are provided with a sufficiently long duration.

Second, the modified macro-level scheme can include the development of better micro-level distribution networks as a condition. Instead of operating modified macro-level and micro-level schemes in isolation, underwriting insurers could be made subject to conditionality. Being allowed to underwrite both programs (and benefit from respective public sector subsidies) could, e.g., require respective investments in micro-level distribution infrastructure. For example, public subsidies for the modified macro-level program could be allocated proportionally to the number of micro-level policies sold. Insurers could also be required to invest a certain share of the macro-level premium they receive into micro-level distribution infrastructure (Fava et al. 2021).

Third, the modified macro-level scheme should feature a clear graduation scheme for beneficiaries to transition into the partially subsidized micro-level cover. Policymakers could also use the modified macro-level scheme to actively prepare and then transition beneficiaries into becoming policyholders under the micro-level scheme, thus boosting scale of the overall program. This is something which has been much discussed but not been implemented in any of the IBLI schemes so far. Concretely, this could be structured in different ways. For example, (a) each beneficiary

could receive free livestock insurance protection for up to 5 TLUs for a maximum of 3–5 years, following which the cover would be withdrawn and they would be expected to make their own decision on whether to approach private livestock insurance providers for future micro-level partially subsidized IBLI cover; or (b) the number of TLUs for which free insurance cover is provided could be reduced gradually over time, e.g. beneficiaries could receive fully-subsidized coverage for 5 TLU in year 1 which would be reduced by 1 TLU per year, such that by the last year 5, they would receive fully funded protection for 1 TLU only. By clarifying such a graduation strategy in advance, budget planning would be facilitated and more vulnerable pastoralists could be brought into the fully funded modified macro-level cover as others graduate from the scheme. Graduation strategies are discussed in more detail in Annex 7.

Fourth, awareness creation and financial literacy education as provided under the modified macro-level program can also benefit usage of the micro-level program. This is something that has already been evidenced for the Kenya program (Fava et al. 2021). Specifically, activities aimed at awareness creation and financial literacy education under the modified macro-level scheme should also extend to the micro-level scheme and thus help boost micro-level product demand. For a future regional IBLI initiative, this is something that should be factored in from the start.

5.5.2 Lesson learned 2: New distribution channels for micro-level sales

Given that micro-level IBLI retail sales have been a major challenge under the Kenya and Ethiopia programs, new distribution channels should be explored. Various alternative retail methods have been attempted already but there may be others. Ideas that were mentioned to the project team as potential micro-level distribution channels include the following:

- **IBLI targeted at meso-level/pastoralist groups.** Some interview partners felt that the greatest potential lay in working not with individual pastoralists but with aggregators. For example, IBLI could be sold to pastoralist production groups, such as milk cooperatives or village savings and loans associations. Insurance could thus help to protect targeted loans to such groups that were provided for value chain investments. By de-risking the extension of credit to pastoralist groups for value chain enhancement, such an approach could thus indirectly support credit extension and investments in upgrading pastoralist value chains. Of the many projects working with pastoralists in the IGAD region, some have specifically worked through pastoralist groups and could offer useful lessons or even a base infrastructure for such an approach (see Box 7). It should be noted, however, that the provision of agricultural finance to pastoralists has generally been cumbersome in all IGAD countries (ICPALD 2016). Another idea could be to sell IBLI insurance to microfinance institutions extending credit to pastoralists as a means to protect their credit portfolio against credit default risk from drought shocks. However, the challenges in such an approach will likely be the weak distribution networks of any financial institutions in the ASALs and the generally low demand of pastoralists for credit (Gesare et al. 2015).
- **A comprehensive mobile tool for IBLI sales and claims handling.** In Kenya, a new company, the Agent for Inclusive Insurance Development Ltd. was recently founded under leadership of the former Chief Executive Officer of Takaful Insurance of Africa. This company is in the process of developing a new mobile-phone-based app that aims at covering the complete IBLI business cycle. The goal is to create one comprehensive digital platform that can be used for IBLI quoting, sales, premium collection, agent training and claims payment. Furthermore, the Agent for Inclusive Insurance Development Ltd. plans to make the tool available to insurers, brokers and agents in multiple countries in the region. By providing a digital solution, the company plans to facilitate the IBLI distribution process.⁶⁸
- **Bundling with services of livestock traders.** Several interview partners shared the idea of working with regional livestock export markets in pastoral areas as an outlet for IBLI sales. While the concrete structure of such an approach still needs clarification, opportunities may lie in the fact that substantial business volumes are traded on these markets.

⁶⁸Telephone communication with former Chief Executive Officer Takaful Insurance Company of Africa, today Executive Director of the Agent for Inclusive Insurance Development Ltd.

Box 7: Exemplary projects in IGAD region working with pastoralist groups

No in-depth review of projects benefiting pastoralist livelihoods in the IGAD region was conducted as part of this study. A good overview of projects targeting livestock value chains in the IGAD region is provided by Guthiga et al. 2017. The below provides a few examples of projects working with livestock producer groups in the IGAD region that the ILRI DIRI-SHA task team came across during the research for this report.

Project name	Partners	Country	Activities	Source
East Africa Dairy Development	Gates Foundation; Heifer International; TechnoServe	KEN, UGA, RWA	Work with dairy farmers to increase dairy-related incomes by increasing ownership of cross-bred cows, increasing amount of milk production and strengthening farmer relationships to formal markets.	Guthiga et al. 2017
Agricultural Growth Program-Livestock Market Development	USAID; local/international NGOs	ETH	Work with pastoralist groups to upgrade three value chains: 1) meat & live animals, 2) skins and leather, and 3) dairy products. Provided training to livestock cooperatives on good farming practices.	Guthiga et al. 2017; USAID 2015
Smallholder Dairy Commercialization Programme	IFAD; State Department of Livestock, the Ministry of Agriculture, Livestock and Fisheries	KEN	Worked 2005–2019 with poor smallholder dairy producers (mostly agro-pastoralists) and traders to strengthen capacity to respond to market opportunities; built market understanding and technical knowledge of production processes and improve enterprise skills.	Guthiga et al. 2017; IFAD 2015
Village savings and loans associations	CARE	All IGAD countries	Village savings and loans associations are self-managed groups of 2–30 people meeting regularly to provide members a place to save their money, to access loans and to obtain emergency insurance. In East Africa, CARE village savings and loans associations are more present than in any other world region. In Uganda, Kenya and Ethiopia alone, CARE has created village savings and loans associations with around 2 million members. CARE supports the linkage of village savings and loans associations to formal financial services, linking in Kenya and Uganda an estimated 267,000 members. Some 81% of all members are women.	CARE 2017
-	-	UGA	To upgrade the dairy value chain in Kisoro district, Uganda a dairy cooperative, a sacco, a milk processing plant and an agricultural extension agency coordinated. The sacco provided a loan to cooperative members for 50% of the cost of a cooling truck to transport milk to the dairy plant. Bank accounts were opened for cooperative members, with milk payments paid in every 15 days, allowing members to access microcredit. The cooperative acted as an intermediary between the dairy plant, the credit institution and producers for milk payments, credit reimbursements and guarantees.	FAO 2013, 2019

5.5.3 Lesson learned 3: Enabling environment/cluster approach

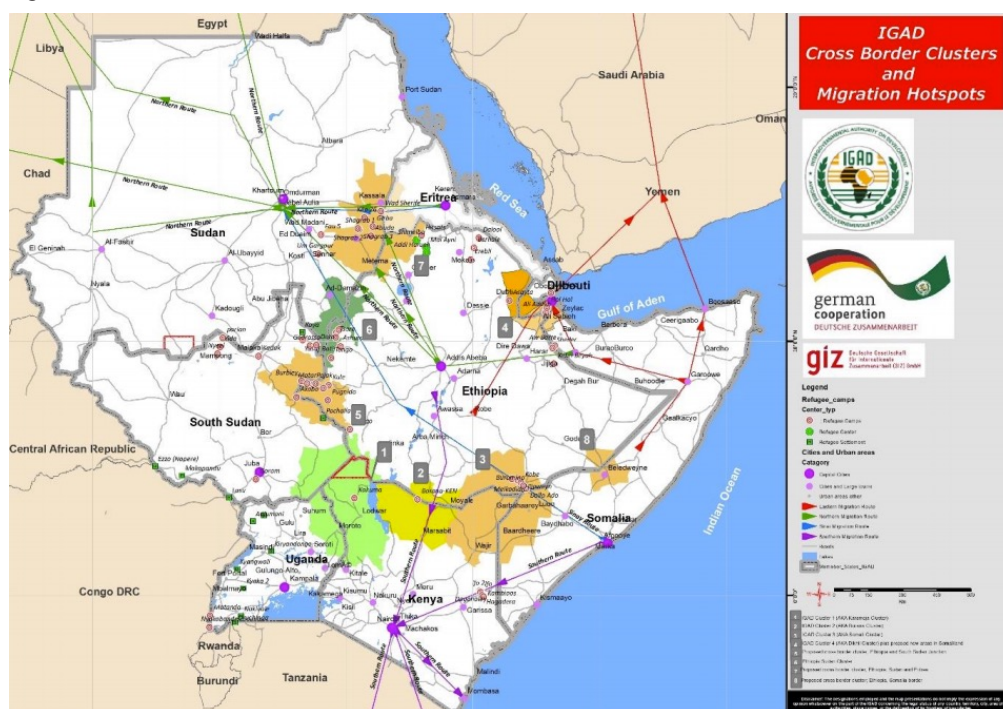
The overall environment for any IBLI program to be effective in remote pastoralist areas in IGAD countries is challenging, to say the least. Many of the problems pertaining to an enabling environment for IBLI have been explored in this report, e.g. the lack of fodder markets or lack of pastoralist access to markets; low levels of financial literacy and IBLI awareness among pastoralist populations; low levels of pastoralist demand for IBLI and affordability issues; the lack of private sector insurance distribution infrastructure; and the need for any regional IBLI product to accommodate different insurance regulatory regimes including of Sharia law.

Given that these major challenges are unevenly distributed across the IGAD region, a regional IBLI program might initially focus on cluster regions in which the overall environment is more suitable. Clusters could be selected where certain minimum requirements are in place already. These could include a mix of the following factors: the existence of fodder markets and pastoralists' access to them; a minimum level of financial inclusion among pastoralists such as the existence of mobile banking services and/or commercial banking branches; minimum average herd sizes among pastoralists to ensure usefulness of IBLI approach; existing pastoralist household registration data to avoid the need for renewed registration; factors contributing to effective micro-level IBLI distribution channels such as the existence of livestock sector cooperatives (see Section 5.2.2); and potentially existing experience with IBLI products. Focusing initially on selected cluster areas would ensure the usefulness of IBLI solutions for pastoralists and might support longer-term sustainability of micro-level IBLI in these areas.

The regional program could build on existing cluster approaches in the region. IGAD already pursues a cluster approach to foster resilience in the region. The approach was launched for three clusters in 2015 (the Karamoja, Somali and Dikhil clusters). Since then, with technical assistance provided by the GIZ,⁶⁹ it has expanded to a total of eight clusters (Figure 40). The Karamoja cluster, stretching across the extended border areas of Ethiopia, Kenya, South Sudan and Uganda, has received most attention by far. For example, in 2017 a cross-border development facilitation unit was set up for the cluster (IGAD Secretariat 2019a). A dedicated website has recorded over 3,000 separate investments in the cluster area⁷⁰ and a series of research studies have been conducted.⁷¹ One USAID-supported study records investments in livestock fodder production in the cluster area (IGAD Secretariat 2020b). Cluster-based approaches have also been pursued by other regional programs, including the Regional Pastoral Livelihoods Resilience Program and the EU program 'Collaboration in Cross-Border Areas of the Horn of Africa Region'.

No detailed cluster analysis has been conducted as part of this study and it should be conducted during the preparation of a regional IBLI approach.

Figure 40: IGAD cross-border clusters.



Source: IGAD Secretariat 2020a.

⁶⁹ GIZ project 'Strengthening IGAD's capacity to increase drought resilience in the Horn of Africa', https://www.giz.de/projektdaten/projects.action?request_locale=en_GB&pn=201520584

⁷⁰ <https://icpald.maps.arcgis.com/apps/MapSeries/index.html?appid=bc486a9b01eb4cc3b81becd5ef63479d>

⁷¹ <https://resilience.igad.int/clusters/igad-cluster-1-karamoja-cluster/>

5.5.4 Lesson learned 4: Enabling environment/targeted parallel investment

Another option to tackle some of the challenges linked to the enabling environment would be to conduct parallel investments in required livestock development interventions to support more conducive implementation conditions. For example, a fund could be established in parallel to a regional IBLI program providing targeted investments in the development of effective markets for fodder and supplementary animal feeds and the access of pastoralists to such markets. Various programs are providing major investments in market infrastructure for pastoralists already, including the DRSLP and the Regional Pastoral Livelihoods Resilience Program. Other areas that would benefit from significant investments and that would directly improve the effectiveness of IBLI products are veterinary services, vaccinations and live-animal offtake markets.

5.5.5 Lesson learned 5: Beneficiary registration and selection

Although some beneficiary registries exist across countries in the IGAD region, identification and enrolment of beneficiaries are likely to pose major challenges in any regional IBLI initiative. Not all stakeholders may agree on the targeting criteria – while some may wish to focus on the poorest, owning minimum numbers of TLUs, others may wish to focus on emerging pastoralists to strengthen sustainability prospects of a micro-level initiative. Once the targeting criteria have been agreed, it is likely that not all existing beneficiary databases include information on the selected criteria, which would thus require building new beneficiary registries in countries. If targeting criteria contained in existing beneficiary registries are selected, there may be data-sharing challenges across governments. And even if a regional beneficiary registry can be established, there will be questions on how to keep it up to date in the medium to long term.

Any needed targeting of beneficiaries should be performed by participating country governments and organizations working with pastoralists on the ground. Regional ministries of agriculture or livestock, NGOs and international institutions such as WFP and FAO often have existing cash transfer operations in place or pursue other activities working directly with pastoralists. These organizations will be best placed to conduct the targeting and registration of pastoralist beneficiaries. The specific organizations most suited to do so will vary depending on country context. The country annexes in Volume II of this report may offer an idea of who these organizations are in each country but further analysis and consultations would be needed.

Targeting and beneficiary registration should be undertaken according to regional standards and should include mobile banking information and use standardized digital tools. To ensure coherence across the regional program, beneficiaries should be selected according to common standards developed by the secretariat mandated with coordinating the program. This pertains to targeting criteria and process, the responsible institutions, etc. When new beneficiaries are registered, their banking information should also be recorded. Providing unbanked households with access to bank accounts could also be considered. Given the major developments on mobile money across the IGAD region in recent years, a focus on mobile solutions seems sensible. For efficiency and accountability purposes, digital tools such as the comprehensive IBLI platform currently under development by the Agent for Inclusive Insurance Development Ltd. should be used for registration.

Programme donors should also consider dedicating a share of their investments to supporting countries in developing pastoralist household registries. When the HSNP was launched in Kenya, the then-UK Department for International Development (DFID) conducted a large-scale registration exercise of all households in the target areas, the four northernmost Kenyan counties: Mandera, Marsabit, Turkana and Wajir. From October 2012 until June 2013, almost 375,000 households were registered, including data on their wealth status and banking information. This registration exercise, considered by DFID at the time as the 'gold standard', cost USD 8.6 million or about USD 23 per household; however, there is some potential for cost savings (Fitzgibbon 2014). If one assumed a targeting cost of USD 20 per

household, registering the 50 million pastoralists in the IGAD region (or 8.3 million households at an average household size of six) would cost approximately USD 167 million. This number seems unsustainably high but it could be significantly reduced by (i) focusing on selected pastoralist cluster areas (as suggested in Section 5.5.3); (ii) conducting a regional program in a selected sub-set of countries rather than all IGAD countries, which seems likely given the different readiness status across IGAD countries; (iii) integrating existing beneficiary registration databases – e.g. from the HSNP in Kenya, the Productive Safety Net Program in Ethiopia and WFP SCOPE across the region; and (iv) harnessing digital technologies to lower registration cost.

A major investment in pastoralist household registration would have large positive externalities for social protection, financial inclusion and humanitarian aid beyond IBLI. Benefits would include the following. (i) The creation country-level beneficiary databases that could be used by all actors working on cash transfer programs. They could serve as primary tools for delivering future emergency response and thus help to provide humanitarian aid much more cost-effectively. (ii) Information on chronically underserved pastoralist households on whom little information tends to be available could serve as important inputs into respective policy planning, e.g. on targeting livelihoods support, financial inclusion measures or building market access; and (iii) Registering pastoralists in remote regions in a social protection/IBLI registry can be a first step to registering them in official country ID systems, which has many associated benefits (access to certain services, government protection, etc).

5.6 Subsidies and long-term sustainability

Premium subsidies are the most widely practiced form of government support to agricultural insurance programs targeting smallholder producers, but they are controversial. In a study of agricultural insurance provision in over 65 countries, Mahul and Stutley (2010) show that premium subsidies are the most common form of government support to agricultural insurance in nearly two thirds of countries. The provision of non-discriminatory premium subsidies is, however, potentially regressive because they disproportionately benefit the larger farmers to the detriment of small and marginal farmers. Once premium subsidies have been introduced by governments, it is politically very difficult to reduce or to withdraw them. Thus, in many of the countries that operate non-discriminatory premium subsidies the fiscal costs to the government are extremely high and, with increasing insurance penetration, increasing place a burden on the national budget.

Any of the three structuring options presented in this report will require continued long-term public financial commitment to operate. Option 1 is fully dependent on public resources to purchase the insurance cover – this would remain unchanged for the long term. Options 2 and 3 also aim to develop micro-level IBLI markets. However, micro-level programs tend to require substantial public support to operate in the long run, as evidenced by experience for agricultural insurance around the world (Mahul and Stutley 2010). For example, 50% of premium payments to the national crop insurance program in Kenya are publicly subsidized – this is one factor which supported the rapid growth of the program over the last years (Kenya News Agency 2020).

Given the substantial expected public financial support required for a regional IBLI program, policymakers should assess its value by commissioning a detailed cost-benefit analysis. This would examine the cost efficacy of IBLI risk transfer premium financing versus alternative catastrophic drought disaster risk financing instruments including, e.g., ex-post humanitarian assistance, social protection cash transfer mechanisms, drought-shock response instruments and contingent lines of credit. Some prior evidence is presented in Box 8 showing that climate index insurance can be a cost-effective instrument for protecting farmers' livelihoods compared to conventional ex-post disaster relief.

A clear financial sustainability strategy should be established early on in the IBLI regional program outlining who is to pay for all relevant program costs including governments, development partners, private sector insurers and insured pastoralists. The strategy should outline clearly who would pay for premium payments and for other related program costs in the short, medium and long term.

Box 8: Assessing cost-effectiveness of drought risk financing instruments

There is a growing body of evidence on the cost-effectiveness of early drought response and pre-arranged financing solutions. For example, Weingärtner and Wilkinson (2019) provide a good overview of the state of evidence on the effectiveness of early response. A few examples of evaluations of disaster risk financing programs are given below.

- **Comparison of African Risk Capacity sovereign risk financing with conventional humanitarian assistance.** The cost-benefit analysis conducted on ARC by Clarke and Hill (2013) estimates that using ex-ante parametric insurance to finance timely disaster response in Africa is 2 to 4.4 times more cost effective than conventional ex-post humanitarian funding. These conventional approaches typically suffer from long delays in mobilizing relief and delivering this to the neediest.
- **Cost-effectiveness of early drought response in eastern Africa.** Cabot Venton (2018) evaluated the benefits of early drought response in Ethiopia, Kenya and Somalia. As per her estimates, early response is around 1.8 times more cost effective than conventional ex-post humanitarian response.
- **Mexico, Component for the Attention of Natural Disasters (CADENA).** Starting in 2003, the Government of Mexico has used parametric crop and livestock insurance as a macro-level instrument to protect several million poor vulnerable crop and livestock farmers and fisherfolk against natural and climatic disasters, as opposed to the former direct compensation programs provided under the Fund for National Disasters. De Janvry et al. (2016) show that CADENA payouts increase the expenditure by about 27% and the incomes by about 38% for beneficiaries and that the benefits of the program exceed the costs under a wide range of estimates. Under CADENA, many of the beneficiaries are pre-registered, which considerably speeds up the distribution of payouts after a major loss event.

In order to provide IGAD stakeholders with an indication of the potential costs of premium subsidy support and other financial support for the start-up and operating costs of a regional IBLI program, some preliminary uptake projections and costings are presented in Annex 6. The illustrative costings assume all eight IGAD countries implement both fully subsidized modified macro-level IBLI livelihood protection programs and commercial micro-level IBLI programs backed by partial premium subsidies.

6. Conclusion and way forward

6.1 Conclusion

There is no easy fix to the drought exposure of pastoralists in the IGAD region. This report has reviewed the socio-economic context of pastoralists in the IGAD region, their vulnerability and exposure to recurrent severe droughts, the ways that governments in the region tend to finance drought-related crises, the status quo of livestock insurance markets in countries in the region, the experience of IBLI products in Ethiopia and Kenya, potential overarching structures for a regional IBLI-based approach, and operational considerations to implement such an approach. Just the amount of material reviewed shows the extremely complex nature of the impacts of droughts on pastoralist livelihoods and of what can be done to reduce their impact.

From the IBLI experience thus far, it has become clear that IBLI-based approaches can provide a valuable contribution to strengthening drought resilience of pastoralists. The positive impacts IBLI solutions can have has been confirmed virtually by all reviews and evaluations published of the existing programs in Ethiopia and Kenya. This also explains the keen interest IBLI is receiving from other governments in the region.

However, the past 10 years of experience with IBLI have also shown that the concrete structure of IBLI solutions matters. Specifically, lessons learned from previous programs that we recommend for any new IBLI-based program include the following.

- **Micro-level voluntary IBLI programs are unlikely to succeed on their own but should have strong linkage with a modified macro-level IBLI program.** The experience with IBLI in Ethiopia and Kenya has highlighted a number of challenges and opportunities that should feed into the design of any new IBLI initiative: (i) modified macro-level IBLI contracts should be sufficiently long to give insurers the breathing space to invest in micro-level distribution networks; (ii) modified macro-level and micro-level IBLI should be planned in unison to include conditions incentivizing insurers to invest in micro-level retail infrastructure; (iii) a clear graduation strategy for beneficiaries of the modified macro-level program should be put in place from the start, supporting their transition to only partially funded micro-level IBLI; and (iv) awareness creation and financial literacy education for the modified macro-level IBLI and the micro-level IBLI scheme should be planned and conducted together to maximize benefits for both schemes.
- New distribution channels for micro-level IBLI products should be considered. Many channels have been tried already to boost IBLI micro-level voluntary sales – mostly unsuccessfully. Promising remaining ideas that have been raised to the research team include meso-level insurance, e.g. of financial institutions; the use of new digital sales and policy management tools; and bundling of IBLI with specific other products and services to pastoralists.
- **IBLI can only be effective when other pre-requisites are met.** Insurance by itself cannot change the lives of pastoralists and build drought reliance and protect livelihoods. Not only is there a need for more concerted financial literacy and insurance training for pastoralists, but systems for targeting and registering pastoralists also need to be improved. Furthermore, public and private sector markets in the ASAL regions need to be strengthened to provide better access to pastoralists for fodder and feed supplements, livestock waterholes/reservoirs, veterinary and vaccination services and live animal offtake markets.

- **A cluster approach ensuring the availability of needed livestock inputs and outputs will maximize the chances of success for an IBLI-based intervention.** The potential benefits of a cluster approach have been discussed in this report. Through existing IGAD cluster initiatives and a systematic analysis of the regional focus of previous donor programs, further analysis should yield a clear idea of which areas might be best suited for focus clusters.
- **Investments in large-scale registration of pastoralists would yield significant benefits.** The estimates for the actual total number of pastoralists in the region vary widely, ranging from 22 to 51 million. Investing in national pastoralist registration systems that take stock of current households would not only yield significant benefits for any IBLI-based program, it would also have large positive externalities, including for social protection interventions, policy planning on financial inclusion and market access, and emergency response measures – whose cost could be lowered significantly.

In the design of any IBLI regional program it will be important to work closely with the national insurance regulators from the outset to ensure that approval for the regional IBLI product is obtained in all eight IGAD countries, and especially in countries where index insurance products have not previously been underwritten by local insurers (Djibouti, Eritrea, Somalia, South Sudan and Sudan). It will also be important to ensure that the regional IBLI product is Sharia (takaful) compliant in countries where Sharia law applies (Somalia and Sudan) and/or with large Muslim pastoralist populations (Ethiopia and Kenya).⁷²

We have outlined three different structuring options that could be followed to set up a regional IBLI approach that must now be evaluated by interested governments and development partners. There are many questions that we have not been able to answer as part of this report and that should be asked and answered before any regional IBLI scheme is implemented. They include the following.

- **What is be the ultimate goal of the regional IBLI initiative?** If it is to protect the poorest and most vulnerable, a modified-macro level approach will be most appropriate. If it is to support governments in the region, a sovereign macro-level approach might be best. If it is to build sustainable markets, a market-based approach will be best.
- **Which countries should the program focus on?** There may be a rationale for a sequenced approach, with countries with more-developed insurance markets joining first or implementing micro-level voluntary IBLI programs first.
- **How should appropriate alignment between emerging donor programs be created?** Donors of the large emerging regional programs, such as AfDB and WBG, should ensure that their interventions on IBLI and pastoralist livelihoods complement each other.

6.2 Way forward

With regard to the next steps and way forward, interested parties (IGAD governments, pastoral organizations, donors, development partners, insurers and reinsurers) may wish to consider the following outline course of action.

1. Presentation by the project team of key results of this study to interested stakeholders.
2. IGAD governments and donors may consider voting on whether to take this initiative to the next phase (project preparation phase 6 to 12 months maximum).
3. Should such vote be successful, IGAD governments and donors could appoint a public-private and multi-stakeholder steering committee and technical working group charged with building on the findings and recommendations of the DIRISHA study to plan and design a regional IBLI 5-to-10-year implementation plan and budget (program preparation phase). The parties would need to establish an operational budget for this program preparation phase.

⁷²Key rules governing Islamic insurance include (i) absence of interest-based (Riba) transactions; 2) the avoidance of economic activities involving speculation (Gharar) and gambling (Maiser); 3) the discouragement of the production of goods and services which contradict the value pattern of Islam (Haram).

4. The steering committee and technical working group would first clearly define the objectives, scope and intended structure of the regional IBLI initiative, including roles and responsibilities of the involved stakeholders.
5. The steering committee and technical working group would then invite leading international reinsurance brokers to submit proposals for a regional IBLI insurance and reinsurance program (which may draw on one or more of the structural options set out in this DIRISHA study).
6. The steering committee and technical working group would commission a formal study by a suitably qualified international organization into the costs and benefits of alternative social- and livelihood-protection disaster risk financing approaches (cost-benefit analysis).
7. The steering committee and technical working group would commission a study by a suitably qualified international organization to design a monitoring and evaluation, quality assurance and impact assessment strategy.
8. The steering committee and technical working group would also work closely with the insurance regulators and private insurance associations in each of the eight IGAD countries to identify interest and support from private local insurers and regional and international reinsurers.
9. During the project preparation phase, it is assumed that the steering committee and technical working group would work closely with international development banks that may be interested in financing this regional IBLI initiative.
10. A workshop would be held at the end of the project preparation phase for approval by the key public and private stakeholders and for agreement on the formation of the multi-stakeholder board and technical secretariat, who would, respectively, coordinate overall policy and implementation of the regional IBLI program. It is probable that key members from the steering committee and technical working group would wish to join the board and secretariat.

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Annex 1: Glossary

Actuarial	Branch of statistics dealing with the probabilities of an event occurring. Actuarial calculations, if they are to be at all accurate, require basic data over a sufficient period of time to permit likelihood of future events to be predicted with a degree of certainty.
Ad hoc response	Relief arranged in the aftermath of a disaster. Ad hoc responses are generally less efficient than planned responses or a well-designed risk management framework.
Adverse selection	Adverse selection occurs when potential insurance purchasers know more about their risks than the insurer, leading to participation by high-risk individuals and non-participation by low-risk individuals. Insurers react either by charging higher premiums or not insuring at all, as in the case of floods.
Agricultural insurance	Insurance applied to agricultural enterprises. Types of business include crop insurance, livestock insurance, aquaculture insurance and forestry, but normally exclude building and equipment insurance, although these may be insured by the same insurer under a different policy.
Basis Risk	The difference between an index and the shock for which the index is supposed to be a proxy. A payout triggered by an index may be higher or lower than the beneficiary's losses, leading to overpayment or shortfall, respectively.
Co-insurance	1. The situation where the insured is liable for part of each loss, which is often expressed as a percentage of the sum insured. 2. When several insurers each cover part of a risk.
Drought	One of the most commonly encountered perils by farmers, but it is also one of the most difficult perils to insure because of problems of its definition, isolation and measurement on effects on crop and livestock production. In contrast to most weather perils, drought is a progressive phenomenon, in terms of an accumulating soil moisture deficit for plant growth, and its impact on crop and livestock production is often extremely difficult to predict, then measure and isolate from other non-insured causes.
Ex ante risk mechanism	Action taken prior to a potential risk event. Preparing before a disaster helps avoid inefficient, quick-response coping decisions. If ex ante strategies are not in place, short-term coping strategies will be utilized that have no significant benefit in the long run.
Ex post risk mechanism	Risk management strategies that are developed in reaction to an event, without prior planning. While ex post strategies have a role to play in a risk management program, risk management mechanisms can be more effective when introduced ex ante.
Exposure	The amount (sum insured) exposed to the insured peril(s) at any one time. In crop insurance, exposure may increase then decrease during the coverage period following the growth stages of the crop from planting to completion of harvest.
Fronting	The use of a licensed, admitted insurer to issue an insurance policy on behalf of a self-insured organization or captive insurer without the intention of transferring any of the risk.
Hazard	A physical or moral feature that increases the potential for a loss arising from an insured peril or that may influence the degree of damage.
Indemnity	The amount payable by the insurer to the insured, either in the form of cash, repair, replacement or reinstatement in the event of an insured loss. This amount is measured by the extent of the insured's pecuniary loss. It is set at a figure equal to but not more than the actual value of the subject matter insured just before the loss, subject to the adequacy of the sum insured. This means for many crops that an escalating indemnity level is established as the growing season progresses.

Index-based livestock insurance	Satellite index insurance for livestock holders. Index-based livestock insurance (IBLI) originated in 2006 in Mongolia with the launch of a micro-level livestock mortality index insurance cover based on a county-level livestock mortality index. In 2010 IBLI was launched in Kenya as a micro-level predicted livestock drought mortality index combining satellite imagery (based on the Normalized Difference Vegetative Index (NDVI)) and county-level livestock mortality data. Subsequent micro-level and modified macro-level IBLI programs in Kenya and Ethiopia have used satellite NDVI as a proxy for forage availability in pastoral regions.
Index insurance	Index insurance makes indemnity payments based not on an assessment of the policyholder's individual loss, but rather on measures of an index that is assumed to proxy actual losses. Two types of agricultural index insurance products are (i) those based on area yields, where the area is some unit of geographical aggregation larger than the farm, and (ii) those based on measurable weather events.
Insurance	A financial mechanism which aims at reducing the uncertainty of loss by pooling a large number of uncertainties so that the burden of loss is distributed. Generally, each policyholder pays a contribution to a fund in the form of a premium commensurate with the risk s/he introduces. The insurer uses these funds to pay the losses (indemnities) suffered by any of the insured.
Insurance agent	The person who solicits, negotiates or implements insurance contracts on behalf of the insurer.
Insurance broker	The person who represents the insured in finding an insurer or insurers for a risk and negotiating the terms of the insurance contract. A broker may also act as an agent (i.e. for the insurer) for the purposes of delivering a policy to the insured and collecting premium from the insured.
Insurance policy	A formal document including all clauses, riders and endorsements which expresses the terms, exceptions and conditions of the contract of insurance between the insurer and the insured. It is not the contract itself but evidence of the contract.
Insured peril	The cause of loss stated in the policy which on its occurrence entitles the insured to make a claim.
Loss adjustment	Determination of the extent of damage resulting from occurrence of an insured peril and settlement of the claim. Loss adjustment is carried out by the appointed loss adjuster who works on behalf of the insurer.
Loss ratio	The proportion of claims paid (or payable) to premium earned. A loss ratio is usually calculated for each class of business in which an insurer participates. Analysis of loss ratios can be useful in assessing risks and designing appropriate insurance structures.
Macro-level	The economic level at which countries and large donor agencies working with these countries experience risk of weather-induced humanitarian crises or economic instability caused by price volatility.
Meso-level	The economic level at which banks, micro-finance institutions, producers, traders, processors and input providers experience risk due to the vagaries of weather and price.
Micro-level	The economic level at which individual farm households experience risks due to shocks such as adverse weather events, price fluctuations or disease.
Moral hazard	The problems generated when the insured's behaviour can influence the extent of damage which qualifies for insurance payouts. Examples of moral hazard are carelessness, fraudulent claims and irresponsibility.
Premium	The monetary sum payable by the insured to the insurers for the period (or term) of insurance granted by the policy. $\text{Premium} = \text{premium rate} \times \text{amount of insurance}$. Also, the cost of an option contract – paid by the buyer to the seller.
Premium rate	The price per unit of insurance. Normally expressed as a percentage of the sum insured.
Reinsurance	When the total exposure of a risk or group of risks presents the potential for losses beyond the limit which is prudent for an insurance company to carry, the insurance company may purchase reinsurance, i.e. insurance of the insurance. Reinsurance has many advantages, including (i) levelling the results of the insurance company over a period of time; (ii) limiting the exposure of individual risks and restricting losses paid out by the insurance company; (iii) possibly increasing an insurance company's solvency margin (percent of capital and reserves to net premium income), hence the company's financial strength; and (iv) that the reinsurer participates in the profits of the insurance company, but also contributes to the losses, the net result being a more stable loss ratio over the period of insurance.
Risk aggregation	The process of creating a risk-sharing arrangement which gathers together or pools risks, thereby reducing transaction costs and giving small households or other participants a stronger bargaining position.

Risk management	Care to maintain income and avoid/reduce loss or damage to a property resulting from undesirable events. Risk management involves identifying, analysing and quantifying risks and taking appropriate measures to prevent or minimize losses. Risk management may involve physical mechanisms, such as vaccinating animals or improving the management of grazing lands. It can also involve financial mechanisms, e.g. hedging, insurance and self-insurance (carrying sufficient financial reserves so that a loss can be sustained without endangering the immediate viability of the enterprise in the event of a loss).
Risk mitigation	Actions taken to reduce the probability or impact of a risk event, or to reduce exposure them.
Risk retention	The process whereby a party retains the financial responsibility for loss in the event of a shock.
Risk transfer	The process of shifting the burden of financial loss or responsibility for risk financing to another party through insurance, reinsurance, legislations or other means.
Risk coping	Strategies employed to cope with a shock after its occurrence. Examples of risk-coping strategies are the sale of assets, seeking additional sources of employment and social assistance.
Risk financing	The process of managing risk and the consequences of residual risk through products such as insurance contracts, CAT bonds, reinsurance or options.
Risk layering	The process of separating risk into tiers that allow for more efficient financing and management of risks. High probability, low-consequence events may be retained by households to a certain extent. The market insurance layer is characterized by the ability of the market to manage risks through insurance or other contracts. Low-probability, high-consequence events characterize the market failure layer and, at this layer of risk, government intervention may be necessary offset the high losses.
Risk pooling	The aggregation of individual risks for the purpose of managing the consequences of independent risks. Risk pooling is based on the law of large numbers. In insurance terms, the law of large numbers demonstrates that pooling large numbers of roughly homogenous, independent exposure units can yield a mean average consistent with actual outcomes. Thus, pooling risks allow an accurate prediction of future losses and helps determine premium rates.
Scalable safety net	A social protection program that has the ability to increase its caseload and/or its intensity of support in response to catastrophic events.
Shock	An unexpected traumatic event such as death in the family or loss of land and livestock which can be caused by catastrophic weather events or other unexpected phenomena. Price shocks occur when the price of commodity changes dramatically due to changes in local or global supply and demand, affecting the livelihood of households dependent on this commodity either for income or caloric intake. Economic shocks can occur at the micro-, meso- and macro-levels and can have long-term consequences for the economic well-being of actors at each level.
Social safety net	Various services usually provided by the government which are designed to prevent individuals or households from falling below a certain level of poverty. Such services include free or subsidized health care, child care, housing, and welfare.
Subsidy	A direct or indirect benefit granted by a government for the production or distribution (including export) of a good or to supplement other services. Generally, subsidies are thought to be production and trade distorting and cause rent-seeking behaviour, resulting in an inefficient use of resources.
Underwrite	To select or rate risks for insurance purposes.

Annex 2: Livestock insurance types

Livestock insurance is widely available in both developed and developing countries. A World Bank 2008 survey showed that livestock insurance was available in 85% of the 65 surveyed countries with agricultural insurance (Mahul & Stutley 2010). The world's largest livestock insurance markets in terms of numbers of insured livestock and premium volume are China, Japan and Spain. In many other countries, however, the programs are very small, accounting for the fact that the international insurance market for livestock is much smaller than the crop insurance market. In 2013, the international insurance market for livestock accounted for about 7% (9% with the inclusion of bloodstock insurance) of the total global agricultural insurance premiums written.⁷³ The classes of animal which can be insured under a livestock insurance policy typically include camels, cattle and water buffalo, sheep and goats, pigs, horses and donkeys, pets (cats and dogs) and poultry.

Traditional indemnity-based livestock insurance

The most widely available type of livestock insurance cover is individual animal named-peril mortality cover⁷⁴ which insures losses arising from accidental injury and death of the animal due to natural causes such as fire, lightning, flood etc. Additional coverage can sometimes be purchased for veterinary expenses, transport and named non-epidemic/non-contagious diseases. Exclusions usually include all epidemic diseases, theft and loss of economic use of the animal. The sum insured is usually based on the market value of the animal and this reduces over time according to the age of the animal. For individual animal insurance, premium rates range from 1.5% to 10% of the sum insured based on the type of animal, its age, location and the functions it performs. For individual animal cover, deductibles range from no deductible to a co-insurance on the value of the claim of between 10% and 20%.

In the IGAD region of Africa, insurance companies in Kenya, Uganda, Sudan have for a number of years marketed individual animal mortality cover mainly to commercial dairy cattle producers. Uptake rates for this product are, however, very low in the region.

In some markets, all-risk livestock mortality insurance is available, including for diseases and, in a few countries, specialist business interruption cover is available for epidemic diseases of cattle and poultry, albeit on a very selective basis. Germany has one of the largest business-interruption markets for livestock (beef and dairy cattle, swine and poultry), which protects producers against the risk of business interruption following an epidemic disease outbreak and when restrictions on the movement of or sales of animals and animal products (milk, eggs, etc.) results in loss of income and additional costs of feeding the livestock. No country in the IGAD region currently offers any form of business interruption to livestock producers.

⁷³In 2013 the total global agricultural insurance premium volume was about USD 23.5 billion of which multiple peril crop insurance (MPCI) accounted for about 73% of total premium, followed by crop hail (15%) and then livestock (7%), bloodstock (2%) and aquaculture (1%) (Figures based on Mahul & Stutley 2010; SwissRe 2013 and author's best estimates).

⁷⁴The WBG 2008 survey of 65 countries with some form of agricultural insurance provision showed that traditional livestock accident & mortality cover was available in 69% of these countries.

Bloodstock insurance provides cover for high-value animals, mainly equines. Animals are either insured on an individual basis or collectively, such as where a stable of horses is insured. The insured events include mortality, disability, infertility, medical treatment and surgery. In addition, specialist policies are available to cover loss of animals in transit or at exhibitions, carcass rejection at the slaughterhouse, loss of use and pet insurance.

Most traditional indemnity-based livestock insurance products have been designed in middle- and high-income countries for medium- to large-scale commercial livestock producers of cattle (beef and milking herds), swine, bloodstock and commercial poultry, which are produced under high levels of husbandry and veterinary management and where animals are tagged at birth, regularly inspected and vaccinated, maintained in intensive feed lots or in fenced fields from which they cannot stray and fed on high-quality pasture and/or supplementary feeds and concentrates. These intensive livestock production systems are only encountered on a few commercial dairy, beef, pig or poultry production units in IGAD countries, where most livestock production (camels, cattle, sheep and goats) is practiced on an extensive basis on semi-arid rangelands.

Livestock underwriters usually set very high standard terms and conditions of insurability which cannot be met by small-scale herders in developing countries, including individual animal identification through tattooing or branding, ear tags or implantable micro-chips, veterinary certificate of vaccinations, restricting animal movements and normally stipulating that the animals must be secured in fenced fields at a single farm location. Most of these pre-conditions of insurability cannot be met by small-scale livestock producers and migratory pastoralists in the IGAD region of Africa. In addition, the very high costs of implementing and administering traditional livestock insurance for small-scale dairy cattle producers with two or three head of animals or for migratory pastoralists means that there are few commercially viable indemnity-based livestock insurance programs for these small livestock producers in low- and middle-income countries.

Index-based livestock insurance

Index-based livestock insurance offers a potential solution to many of the problems and preconditions of insurability associated with traditional indemnity-based livestock products and programs. IBLI insurance was first introduced in Spain in 2001 under the national agricultural insurance Agroseguro pool scheme and has since then followed two distinct paths.

- As a **satellite pasture-drought index insurance product offered to commercial beef-cattle ranchers in middle- and high-income countries** to protect them against the **additional costs of working** associated with having to purchase animal feed supplements and fodder in times of severe droughts and depletion of pasture and grazing. These satellite pasture-drought index covers mainly use a Normalized Difference Vegetative Index (NDVI) and have been commercially scaled-up in Spain (since 2001), in Canada (since 2001) and in the USA (since 2007). This cover is now being piloted in Uruguay (2015–17) and is under research and development in Argentina and Chile for extensive rangeland-beef cattle producers.
- For **small-scale livestock producers and migratory pastoralists in low-income developing countries** to act either as an **asset replacement policy** in the event of the death of the animal or as **asset protection policy** aimed at keeping animals alive in times of severe drought. These programs are being marketed both as voluntary micro-level retail cover to pastoralists or as purchased by governments as meso-/macro-level index insurance products as part of their disaster risk financing programs for vulnerable pastoralists.

The **first micro-level IBLI mortality policy** (asset protection cover) was designed in 2005 by the World Bank to protect vulnerable herders in **Mongolia** against extreme weather events of drought and winter freeze (see Box 1 for further details). This was followed in 2010 by the launch of Africa's first IBLI program in **Kenya**, which was designed as a predicted livestock drought mortality (asset replacement) index cover. The design team was led by a research team from ILRI, and Cornell University and University of California, Davis. This was followed in 2012 by the launch of micro-level IBLI in Oromia Region of **Ethiopia**.

Several governments have also adopted satellite index insurance as **macro-level livelihoods protection cover** to protect vulnerable herders and pastoralists against extreme drought. These programs have been designed as **asset protection cover** to provide pastoralists with timely payouts to keep their breeding animals alive in times of extreme drought and forage scarcity. These programs include the CADENA program Mexico, which was launched in 2003 and, at its peak, insured over 10 million animals in all states (see Box 2 for further details); **KLIP**, which was designed by the Government of Kenya with support from the World Bank and which was launched in the short rains season of 2015/16; and finally, **SIPE**, which was designed by WFP for the Regional Government of Somali Region and which was launched in the Gu season 2018.

Box 1: Index-based livestock insurance program, Mongolia. The first micro-level asset replacement or livestock mortality index was launched in Mongolia in 2005. The Index-based Livestock Insurance Project is a county-level livestock mortality index designed to protect herders against extreme drought and win-ter freeze events which can cause the death of millions of animals. The Mongolian National Statistics Of-fice maintains accurate records of livestock mortality rates by species at local (county or sum level) ena-bling an animal mortality index to be constructed. Cover is voluntary and herders are expected to bear losses up to 6% of their county index. Commercial insurers settle mortality rates from 6% to 30% and the government compensates catastrophe losses exceeding 30% of the county index. The sum insured is based on the market replacement cost of each species of animal and herders may elect to insure as many or few animals as they wish. The program has now been operating for more than 15 years and is currently reaching more than 35,000 herders.

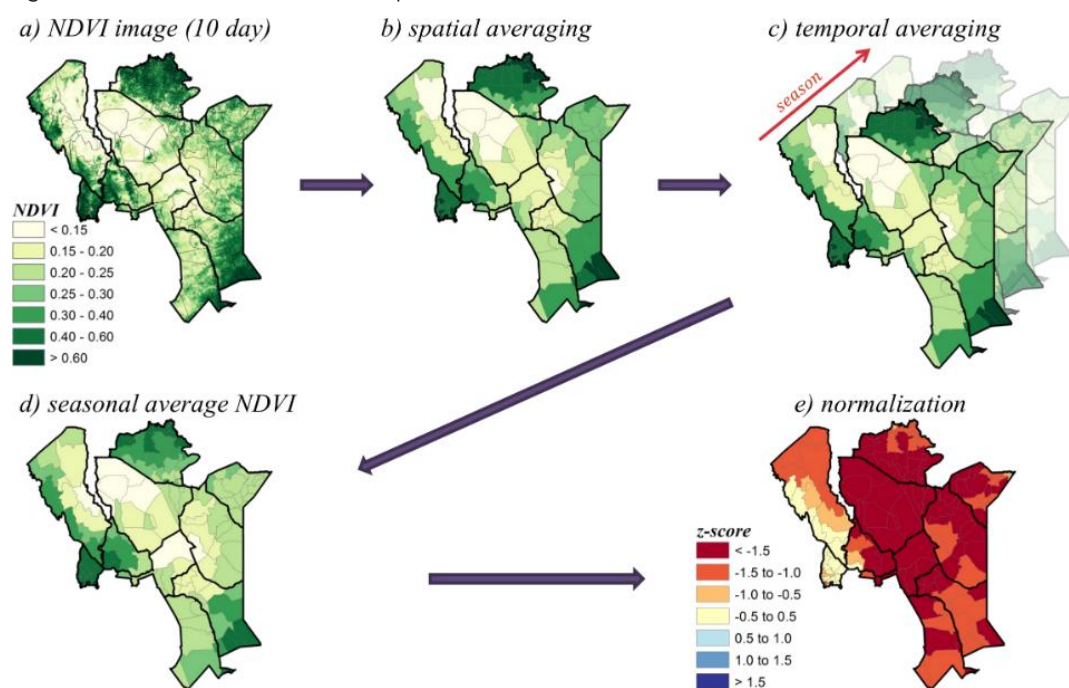
Source: Global Facility for Disaster Reduction and Recovery 2011

Annex 3: Product design features of IBLI products offered to pastoralists in Kenya and Ethiopia

All the micro-level IBLI and meso-/macro-level KLIP and SIPE products offered by insurers in Kenya and Ethiopia are based on a low-cost, accessible and well-established satellite indicator of drought – the Normalized Difference Vegetative Index (NDVI), which is a proxy for vegetation condition. There is well-documented evidence of a strong relationship between rangeland biomass and NDVI for arid and semi-arid rangelands and specifically the use of the NDVI to measure progressive drought conditions on declining forage and grazing availability over time (Fava et al 2021).

The IBLI programs in Kenya and Ethiopia have all used time-series NASA Modis NDVI⁷⁵ data since 2001, which is available on a dekad and monthly basis at a 250 m to 1 km resolution for all the IGAD region of Africa. The time-series NDVI data (2001–2020) are processed spatially, temporally and over the normal rainfall/pasture-growing season and then standardized for each defined unit area of insurance, which is based on the area that a pastoral community or sub-clan typically graze and migrate their animals within, such as a sub-district (Kenya) or Woreda (Ethiopia) (Figure 1).

Figure 1: IBLI/KLIP index calculation steps.

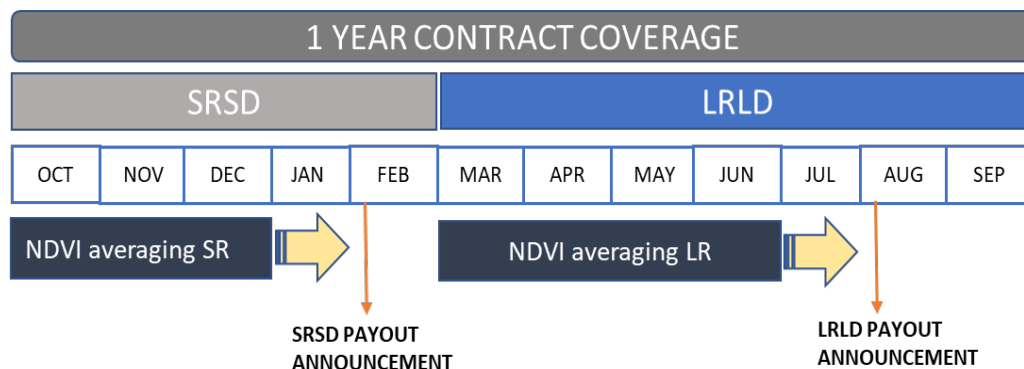


Source: Vrieling et al. 2016.

⁷⁵The ILRI designed micro-level IBLI products in Kenya and Ethiopia and the KLIP all use e-Modis NDVI which is Aqua Modis NDVI data has been filtered and cleaned by the United States Geological Survey before release to the public: in the case of SIPE the Vulnerability Analysis and Mapping, VAM, unit of the WFP download raw Aqua Modis NDVI data and use their own algorithms to filter and clean the data.

The IBLI contracts in Kenya and Ethiopia are annual contracts designed to cover rainfall deficit/drought impacts on pasture growth and forage availability during the two main rainy seasons: the short rains or Deyr season from October to December (three months) and the long rains or Gu season from March to end of June (four months). The IBLI micro-level contracts and KLIP are designed to make single payouts at the end of each season if the cumulative standardized NDVI value falls below the threshold level set to trigger a payout and which is set at a 1-in-5 year per season (i.e. 2.5-year) level for each unit area of insurance. It takes about one month for the United States Geological Survey to process and publish the e-Modis data and therefore claims payments fall due five to six weeks after the end of each seasonal coverage period (see Figure 2).

Figure 2: IBLI/KLIP contract coverage period, index calculation period and timing of payouts (Kenya).



Source: Fava et al. 2021.

Conversely for the SIPE program in Ethiopia, WFP have elected to include both early season and end of season payout windows. As such, if extreme drought has set in by the end of October (Deyr season) or by the end of April (Gu season) which exceeds the threshold trigger, pastoralists receive an early payout as well as the potential for an end of season payout.

The IBLI products today are all asset protection covers and the sum insured is based on the feed maintenance requirements to keep 1 TLU (adult cow) alive per month of the contract. In Kenya the monthly sum insured is currently KES 1,167 per TLU/month (USD 12 per month) to cover the costs of purchased fodder and feed supplements. The Kenya IBLI programs provide payouts to enable pastoralists to purchase supplementary feeds for their animals over the five-month short rains, short dry season (October to February) and for the seven-month long rains, long dry season (March to September). Therefore, the sum insured to feed 1 TLU over 12 months is KES 14,000 (USD 140) per TLU.

In Ethiopia the SIPE program only provides coverage for the two rainy seasons (three-month Deyr season from October to December and four-month Gu season, March to June), the rationale being that in any normal dry season, pastoralists need to conserve fodder reserves and that cover is only for failed rains and depleted forage reserves during the rainy seasons. The sum insured is fixed at ETB 400 per TLU/month (USD 11 per month) based on the costs of local animal feed in Somali Region, and for the seven-month cover period, the sum insured equates to ETB 2,800 (USD 76) per TLU per year.

Under the voluntary micro-level IBLI programs in Kenya and Ethiopia, pastoralists buying drought insurance may elect to insure as many or as few animals as they wish. Conversely in the KLIP livelihoods protection program, each benefitting pastoralist is provided drought insurance for 5 TLUs, which means that the total sum insured per benefitting household is KES 14,000 x 5 TLU = KES 70,000 (USD 700). This is the maximum payout amount a beneficiary of KLIP may receive in any 12-month period if the drought index contract is totally hit in both seasons in that unit area of insurance. Similarly, under SIPE, WFP offers standard cover for 5 TLU cover per benefitting pastoralist. The total sum insured per beneficiary per year is therefore ETB 2,800 x 5 TLU = ETB 14,000 (USD 378).

Five TLUs has been selected for these macro-level social safety net protection insurance programs as the minimum number of breeding stock required to maintain a viable herd through times of severe drought. It is also a typical herd size for poor vulnerable pastoralists in the HSNP counties of northern Kenya although it is well below the recommended number of about 21 TLU for a six-person household to meet the basic needs of a typical pastoralist household (see Box 1).⁷⁶

Box 1: Number of TLUs required to meet the basic needs of a typical pastoralist household

The vast majority of livestock keepers in dryland regions of Africa are poor. Estimates reported in the literature, supported by modelling carried out as part of this study, suggest that about 3.5 TLU per capita are needed to meet the basic needs of a typical pastoralist household. The number can be half that much for the typical agro-pastoralist household that is able to supplement income from animals with income from cropping activities.

In sub-Saharan Africa, most households that keep livestock do not have anywhere near that many animals. The estimated 40 million pastoralist livestock keepers in Africa hold about 51 million TLUs (equivalent to 1.3 TLUs per capita), and the estimated 80 million agro-pastoral livestock keepers hold an estimated 76 million TLUs (equivalent to less than 1 TLU per capita).

Based on these regional aggregates, in the drylands of Africa, the 'average' pastoral household of six people owns about 6 cattle, 15 sheep and 15 goats, (equivalent to 9 TLUs), from which they harvest about 300 litres of milk per year (mostly destined for home consumption), while selling one cow every two years and 10 small ruminants per year. These activities generate about USD 700 per year in household income (milk included), or just over USD 100 per year per household member. As these numbers show, the 'average' livestockkeeper in the drylands of Africa lives below the poverty line.

Source: Cervigni and Morris 2016

⁷⁶Chantararat et al (2014) estimate that in northern Kenya, the minimum viable herd size for a pastoral household is 15 to 20 TLUs because below this herd size, it is very difficult for pastoralists to rebuild their herd numbers after each successive drought when large numbers of animals typically die. In their analysis they show gains from IBLI livestock asset replacement insurance are highest for those with herd sizes around the critical herd threshold (e.g. 15–20 TLU), but the gains are negligible for pastoralists with the lowest herd sizes (5 TLUs) and indeed the payment of premiums during good seasons may merely speed up herd decumulation over time.

Annex 4: The evidence base on impact of IBLI

Impact of micro-level IBLI

Since inception, the IBLI voluntary micro-level insurance programs in Kenya and Ethiopia have been extensively monitored and evaluated by researchers from ILRI, Cornell University and University of California, Davis. They started with base-line individual household surveys and randomized control trials, with subsequent longitudinal seasonal and annual rounds of household surveys. There is therefore a rich evidence base on IBLI production and welfare impacts at the household level.

In Kenya, the IBLI program helps protect insured pastoralists from forced asset depletion (livestock sales) and/or reduced household consumption.

- A 2013 study found that during the severe 2011 drought, IBLI-insured households that received a payout were much less likely to sell livestock, improving their chances of re-recovery (Janzen and Carter 2013). Key findings of their study included:
 - There was a 22–36% average reduction in the number of insured households who anticipated selling livestock to cope with the 2011 drought (a 50% drop overall), which enhanced their ability to recover from the drought.
 - Insured households were 27–36% less likely to reduce meals on average (overall drop of nearly 33%), which indicated there would be a reduction in malnourishment in the food-insecure region.
 - Insured households would be 42–50% less dependent on food aid and 0–26% less reliant on other aid.
 - The study concluded that these results ‘suggest that insurance can help households to protect assets during crises, without having a deleterious effect on human capital investments’.
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In a follow-up study of IBLI in Kenya, the same authors found that there were marked differences between the risk coping strategies of different wealth categories of pastoralists: wealthier households primarily cope by selling assets and IBLI makes them 96% less likely to sell assets following a shock; poorer households cope primarily by cutting food consumption, and insurance reduces by 49% their reliance of this strategy (Janzen and Carter 2019)

Other IBLI production and welfare impacts include the following: IBLI sharply improves herd survival rates by considerably reducing the risk of catastrophe losses; households purchasing IBLI increase invest in livestock veterinary and vaccination services and reduce their herd size (most likely as IBLI insurance presents an alternative to maintaining precautionary savings in larger herd size). IBLI also contributes to increased milk productivity of livestock and income, greater household income per adult equivalent and improvements in children's mid-upper arm circumference, which is a good measure of nutritional status (Jensen, Barrett and Mude 2015).

Under the IBLI program in Kenya, sales data for the period 2010 to 2015 show that 47% of all pastoralists who voluntarily purchased IBLI were female. In pastoral households, men own and manage the cattle and are often away at seasonal grazing lands when the IBLI village insurance promoters visit the villages. Women, however, are usually more sedentary, living in the villages with their children and they are in charge of the small ruminants (sheep and goats-milking flocks/herds), which are kept close to the homestead. The fact that goats account for 88% of all insured animals under IBLI to date may explain the very high proportion of female buyers of IBLI. The findings also show that even in counties where the population is predominantly Muslim, female pastoralists have access to the IBLI insurance products. Bageant and Barrett (2015) examine IBLI's uptake based on gender. They find that although it appears to be equitably accessed by men and women alike, demand is gender differentiated along three dimensions: risk aversion, informal insurance and product education levels. Social norms and institutions render women's physical, social and economic vulnerabilities different from men and impact their access to innovative products intended to mitigate the long-term detrimental effects of shocks. Findings are ambiguous, however, with Jensen, Barret and Mude (2015) finding no specific gender differences in overall demand. However, the challenges of marketing insurance products to remote communities with high illiteracy and limited exposure to formal insurance inevitably involves an education component, which women may find harder to reach. Women are found to be more responsive to home-based product education than men.

During the severe 2016/17 drought, 93% of surveyed IBLI purchasing pastoralist households in Oromia Region, Ethiopia reported that in response to anticipated drought insurance payouts they adapted their drought risk management decisions by increasing their purchases of livestock inputs (forage/fodder and veterinary services) as well as migrating their animals and investing in non-livestock activities. When IBLI payouts were received, 80% of respondents reported spending these on livestock inputs of fodder, water and veterinary services in order to keep their animals alive, as well as using some of the payouts for food, education and human health services (Taye et al. 2019).

The rigorous time-series analysis of the IBLI product in Ethiopia and Kenya provides convincing evidence that IBLI can be an effective drought livelihoods protection tool and at least as cost-effective as alternative cash transfer programs (such as HSNP) in increasing the well-being of pastoralists (Jensen, Barrett and Mude 2015).

Impact of modified macro-level IBLI

Kenya Livestock Insurance Programme

Over the past five years KLIP has provided clear proof of concept that the satellite pasture index insurance product implemented under a large-scale public-private partnership can support the Government of Kenya's drought-shock response programs in the semi-arid ASALs of northern Kenya by triggering substantial drought payouts (valued at USD 10 million) to large numbers of vulnerable pastoralists and their families.

Fava et al. (2021) assessed KLIP's impacts at three broad levels: (i) government/public sector level by supporting the Government of Kenya's fiscal budget in times of severe drought shock; (ii) crowding in of private commercial insurers to underwrite IBLI cover, and the development of public and private service and input supply markets to service pastoralists' needs in the ASALs, and (iii) the protection afforded to vulnerable pastoralists who have been free beneficiaries of KLIP.

During this period the Government of Kenya has fully funded KLIP premiums amounting to USD 9.5 million and in return has purchased maximum financial protection of USD 52.34 million. Unlike the social safety net programs such as the HSNP scalability fund, where USD 1 in the fund contributes USD 1 in drought protection to the target audience, KLIP enables the Government of Kenya to access international capital markets in times of severe drought and at maximum liability: for every USD 1 premium paid in KLIP premiums this would have leveraged USD 5.4 in payouts. The Government of Kenya budget for premium subsidies is, however, restricted and this has limited further scale-up of KLIP in recent years.

The major commitment to KLIP of local insurers and their international reinsurers has been shown by the fact that they have continued to support KLIP in spite of the negative underwriting results over five years. There is evidence that KLIP has also incentivized the government through the State Department of Livestock, the Ministry of Agriculture, Livestock and Fisheries to invest in strategic fodder reserves and water boreholes and to strengthen veterinary services in the KLIP-serviced counties, and that the private sector has also responded by trucking in harvest residues and fodder from crop-growing regions of Kenya.

To date there has been no systematic monitoring and evaluation of KLIP impacts at the household level by the Government of Kenya. However, several studies, such as GIZ (2018) (see Box 1 for details) and Taye et al. (2019), point to favourable impacts in providing timely funding to pastoralists to enable them to maintain their livestock, while at the same time enabling them to maintain the consumption levels and family welfare. Taye et al. (2019), reporting on the severe 2016/17 droughts, found that 80% of KLIP respondents who expected to receive a payout purchased more food on credit and purchased more livestock inputs (forage/fodder/veterinary services) and also kept their children in school. Furthermore, some reduced the sales/slaughter of livestock as they perceived the upcoming indemnity payments would help them keep their livestock alive in spite of the drought. More than 70% of respondents reported spending their KLIP payouts on livestock inputs such as fodder, water and veterinary services as well as improving human welfare.

Box 1: Key findings of KLIP impact evaluation survey conducted by GIZ in 2018

- The GIZ study found that KLIP is helping pastoralists improve their ability to cope with livestock and household needs in times of severe drought.
- Self-reported satisfaction with the program is high and the vast majority of beneficiaries use the part of the payouts to fund expenses for their livestock (maintenance, restocking and production equipment) but money was also spent on household needs.
- Qualitative evidence also found that beneficiaries had shared payouts to support neighbours and the broader community. This includes funding of a communal water well or the joint purchase of a male goat for breeding purposes. Such actions, in turn, help to strengthen food security.
- Approximately half of respondents (51%) said they would be willing to insure at least one animal, which indicates an emerging understanding an acceptance of insurance as a concept.

Source: Executive seminar IBLI, Nairobi 24 July 2018

Satellite Index Insurance for Pastoralists in Ethiopia

SIPE represents a large-scale public-private partnership using index insurance to finance drought resilience building and livelihood protection in vulnerable pastoral communities that make up much of eastern and southern Ethiopia. It also represents the first time that all of the mainstream public and private agricultural insurance companies in Ethiopia have come together to collaborate through a co-insurance pool agreement in underwriting a livelihood protection index insurance program in Ethiopia. With major support from WFP (product design and premium

financing), the Regional Government of Somali Region (responsible for policy and main implementing partner) and the Productive Safety Net Program (provision of operational infrastructure), the program has been able to scale up rapidly over the past three years to 15,000 beneficiaries, with a target to increase to 30,000 by 2022.

SIPE has only been operational for three years and has only experienced one season of moderate drought insurance payouts.

It is therefore too early to assess SIPE's actual drought resilience building and welfare impacts on participating vulnerable pastoral households. In 2019 WFP commissioned an evaluation survey by the Centre for Evaluation and Development (C4ED). Key findings of this study include the following.

- Positive effects of SIPE were more evident at the community level than the individual household level. Communities reported clear benefits from the additional insurance for assets public work activities required for insurance coverage, which have contributed to improved water and pastureland availability, as well as social cohesion.
- Awareness of insurance and SIPE was relatively high, but exact knowledge on index insurance and its advantages and disadvantages has remained rather low. This has led SIPE beneficiaries – erroneously – to being rather confident that a payout would happen and to assuming that their entire herd is insured. This scarce knowledge derives from community (kebele) officials responsible for training of beneficiaries.
- As a by-product of SIPE, all insurance holders have been registered on a mobile money platform to process potential insurance payouts, but the actual use of these accounts has been limited so far. Nevertheless, this activity is an important first step towards further financial inclusion.
- Insurance holders confirmed that they would spend their potential insurance payouts partially on livestock – albeit less than on food. However, this hypothetical behaviour could not be verified given the actual lack of payouts. A positive, albeit weak, behavioural effect on the use of veterinary medicine or services has been observed.
- SIPE has not yet stimulated the food intake, dietary diversification or food expenditure of pastoralist households. Again, no large effects can be expected since the insurance has not paid out and there have been no effects on the intermediate outcomes towards better food security (income diversification and livestock protection) (C4ED 2019).

In Ethiopia, it is noted that faced with the reality of persistent and recurrent droughts, the government recognizes index-based livestock insurance as currently provided by ILRI and Oromia Insurance Company as a micro-level product in Borena zone of Oromia Region and as meso-level drought-resilience building/livelihoods protection cover by WFP and the Government of Somali Region through a pool of four co-insurers, as an important policy initiative. The Ethiopian government, with support from ILRI and the Bill and Melinda Gates Foundation, has conducted a livestock sector analysis and has developed a master plan to guide livestock development among other policy initiatives. The government has also drafted legislation that allows pastoralists to use livestock as collateral for loans, although credit provision cannot succeed without a successful insurance scheme. Emergency responses to addressing shocks are in place throughout Ethiopia, including pastoral regions, with early warning systems as part of the national disaster risk management strategy. The government has also developed a livestock masterplan with USD 600 million allocated towards coping with drought, with additional allocations from partner contributions (Wangalachi et al. 2020).

Annex 5. African Risk Capacity

Mission and objectives. ARC Agency was established in 2012 as a specialized agency of the African Union to help its member states improve their capacities to better plan, prepare and respond to extreme weather events and natural disasters. The objective of ARC Agency is to assist the member states to reduce the risk of loss and damage caused by extreme weather events and natural disasters affecting Africa's populations by providing targeted responses to disasters in a more timely, cost-effective, objective and transparent manner.

Constitution. ARC is governed by three entities: (i) the conference of the parties (member states); (ii) an elected governing board and (iii) the secretariat whose roles and functions are stated in the ARC Establishment Agreement of 2012 that led to the formation of ARC. African Union member states that sign the ARC Establishment Agreement become ARC member states and are eligible to participate in and benefit from ARC's disaster risk management facilities, as well as contribute to the governance of ARC through the conference of parties.

African Risk Capacity entities. ARC comprises two entities: ARC Agency and ARC Ltd. Together, they provide ARC member states with capacity building services and access to state-of-the-art early warning technology, contingency planning, and sovereign risk pooling and transfer facilities.

African Risk Capacity membership. In 2020 ARC has 34 member states in Africa (Figure 1). In the IGAD region, only three countries, Djibouti, Kenya and Sudan, have signed up as members. Somalia is expected to join shortly.

African Risk Capacity Limited index insurance products. ARC's core product is a satellite rainfall-deficit (drought) index insurance product for all of Africa, termed Africa RiskView. It is based on FAO's water requirement satisfaction index. Africa RiskView monitors rainfall during the growing season and the impacts on drought on vulnerable populations and the response costs according to the severity of the drought. The drought policy is sold to the government in each participating country and payouts are in turn settled by ARC Ltd. to the government, which is then responsible for implementing a pre-agreed response plan with affected populations, including crop and livestock producers. ARC is also designing index insurance cover for epidemic diseases (e.g. Ebola), against tropical cyclone damage and flood and most recently in 2020, has contracted ILRI to design a rangeland vegetative index cover to protect pastoralists in the Horn of Africa against drought.

Operations. ARC interacts with its member states through a country engagement process that spans from introducing sovereign disaster risk financing concepts to insuring a country's climate risks. In 2017/18 only three member countries – Burkina Faso, Senegal and the Gambia – purchased ARC's drought index policy, with a total coverage limit of USD 34.3 million. Following severe ENSO El Niño droughts over this period, the demand for drought protection was much higher in 2018/19. Ten governments (the majority in West Africa) purchased main drought cover totalling USD 63.5 million (55% of total of USD 113.9 million) and Save the Children Fund and WFP purchased 'ARC Replica' in six countries, including two additional countries, Burkina Faso and Mauritania, with cover of a further coverage limit of USD 50.4 million (45% of total) (Figure 2).

Figure 1: ARC’s 34 member states in 2020.

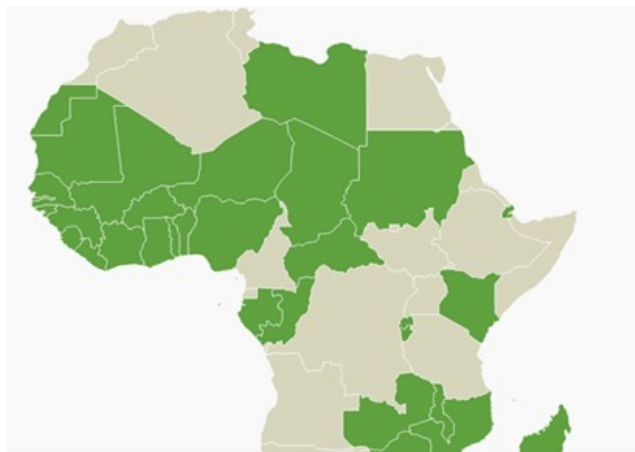
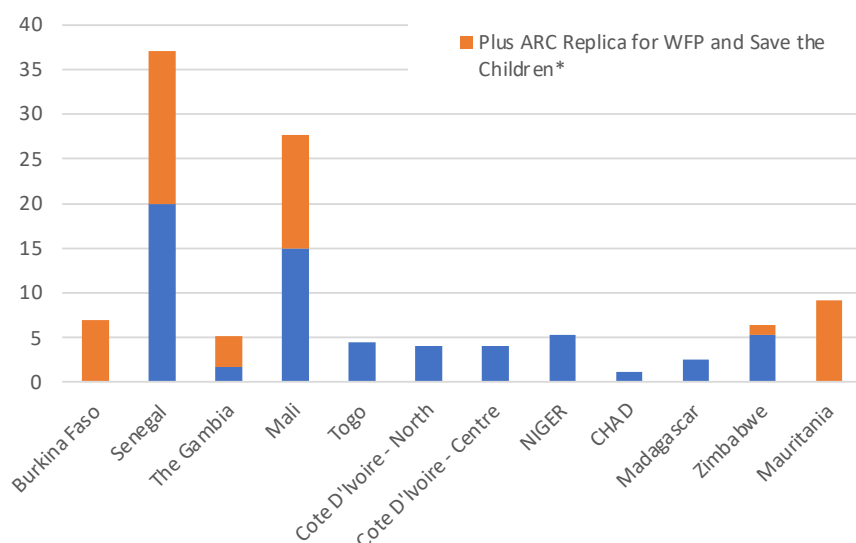


Figure 2: Drought policy coverage by country plus ARC Replica in 2019/2020 policy year.



Source: Price Waterhouse Coopers 2020.

African Risk Capacity results and performance

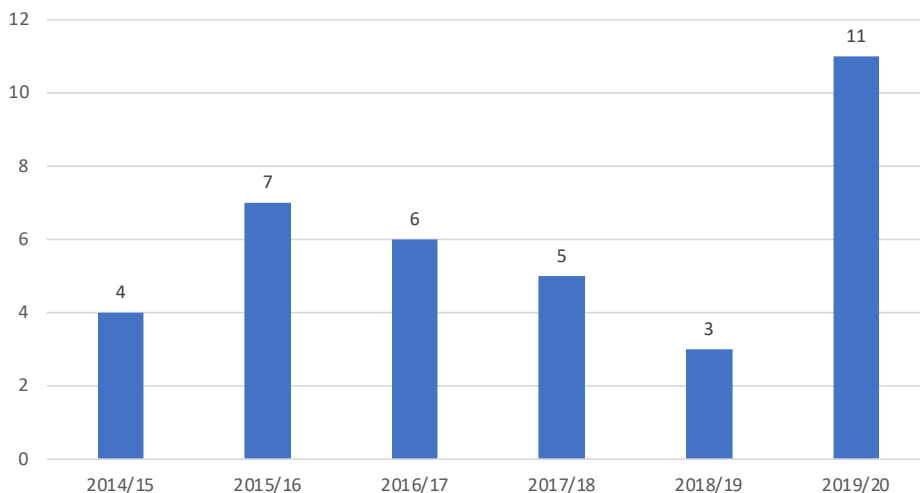
ARC Ltd. has now been providing drought sovereign risk insurance for six full years starting in 2014/15 with four countries. Following major drought payouts in year 1, a total of seven countries purchased cover in 2015/16 when Malawi joined the risk pool. Malawi was the only country with drought payouts in 2015/16 but payouts were both late on account of a need to reprogram the Africa RiskView model and inadequate in meeting the country’s food shortages. In the subsequent three years interest, in ARC waned to only three participating countries by 2018/19 (Figure 3).

It is therefore positive to note that following the very severe droughts between 2017 and 2019 and the launch by AfDB of the Africa Disaster Risk Financing program from 2018 to 2022 to help African governments to finance ARC premiums that in 2019/20, 11 countries purchased drought cover, with additional ARC Replica cover purchased by humanitarian assistance organizations in six countries. Over the past six years, Senegal has consistently supported ARC and purchased cover in all years.

Over the past six years ARC has paid out USD 64 million to nine countries affected by drought and provided timely assistance to more than 2.1 million vulnerable people and provided protection to large numbers of livestock. The largest payouts were in 2014/15, amounting to USD 26.3 million, which was paid out to Senegal, Mauritania and Niger, benefitting 1.3 million people and more than 500,000 head of livestock. This was followed by 2019 drought payouts of

nearly USD 24 million to Senegal (payout of USD 23.1 million benefitting 975,000 people) and Cote D'Ivoire (payout of USD 740,000 to 32,496 beneficiaries.) Smaller payouts were made in 2017 to Malawi (USD 8.1 million covering 2015/16 drought losses), in 2018 to Mauritania (USD 2.4 million), in 2020 to Madagascar (USD 2.13 million) and to Zimbabwe (USD 1.4 million to the government plus USD 290,000 for ARC Replica to WFP).

Figure 3: Number of countries purchasing ARC Africa RiskView drought insurance (2014–2020).



Source: www.africanriskcapacity.org

African Risk Capacity activities in the IGAD region

- **In 2020, three IGAD countries signed up to ARC as members, Kenya, Sudan and Djibouti;** while the other five countries, Eritrea, Ethiopia, Somalia, South Sudan and Uganda, have yet to decide whether to join ARC.
- **To date ARC Ltd. has only sold Africa RiskView drought index insurance to one IGAD country: Kenya (in 2014/15 and again in 2015/16).** These were both claim-free years and since then the Government of Kenya had declined to purchase ARC Africa RiskView.
- **Recently ILRI has assisted ARC to develop a specific satellite-based rangelands drought index insurance product termed cNDVI,** which performs better than ARC's water requirement satisfaction index products in measuring biomass availability in rangelands, and ARC plans to pilot this new product in Kenya and in Ethiopia starting in 2020/21.

Annex 6: Physical and financial uptake projections for the start-up and operating costs of a regional IBLI program

This annex presents some preliminary and illustrative costings for a regional IBLI program in all eight IGAD countries that includes both (i) modified macro-level IBLI fully funded by governments and (ii) micro-level voluntary IBLI with 50% premium subsidies. The indicative costings cover a) IBLI premium subsidy costs and b) other financial support towards the costs of registering pastoralists and providing insurance awareness-creation and education. Key assumptions used in these costings include the following.

- Modified macro-level and micro-level schemes are assumed to be implemented in all eight IGAD countries.
- It is assumed that governments and donors will finance premium subsidies on start-up and operating costs for both the modified macro-level IBLI program and the micro-level IBLI program.
- Premium subsidies are set at 100% for the modified macro-level programs and 50% for the partially subsidized micro-retail IBLI program. The indicative premium level is set based on experience in Kenya and Ethiopia at 15%, and therefore costs of premium subsidies presented are deemed to represent reasonably accurately the magnitude of premium subsidy costs regional IBLI stakeholders will have to incur.
- The financial subsidies for start-up and operating costs are presented as a contribution to incentivize private sector insurers to support this IBLI initiative and do not necessarily represent the full costs of IBLI implementation. Private sector insurers will be expected to contribute towards the administrative and operating costs of IBLI implementation at both modified macro- and micro-levels and to charge a reasonable loading in their commercial or original premiums charged to clients to contribute towards these costs. With the very high administrative and operating expenses experienced to date on the micro-level programs in Ethiopia and Kenya (by a factor of 1.1 to 1.3 of the premium rate), financial support on administrative and operating expenses will be necessary from government and/or donors to avoid a situation where insurers have to charge premiums of 20–30% or more on the micro-IBLI programs in order to cover their expenses.

The presented figures are purely indicative. Figures for any actually implemented regional program are likely to differ significantly. The calculations are provided nonetheless in order for policymakers to get a broad sense of the order of magnitude a potential program could have. Key reasons why figures will differ in reality include the following.

- It is assumed that all eight countries would implement both modified macro-level and micro-level programs. As discussed for Options 2 and 3, it is highly unlikely that this will be the case because of large differences in the level of insurance market development across the IGAD countries. It is much more likely instead that a program would start with a smaller subset of countries.

- The calculation model used here is highly simplified. For example, it is assumed that the operational costs for insuring 1 TLU per year amount to approximately USD 2 per year both for modified macro-level and micro-level programs. In reality, however, operational costs tend to be significantly higher for micro-level policies than for modified macro-level policies, as the sales process is significantly more complex.

Modified macro-level IBLI for IGAD region

This sub-section presents illustrative costings for large-scale social protection IBLI cover in the eight IGAD

countries. Under the most realistic (medium uptake) scenario, it is assumed that the program will reach 5% of the most vulnerable pastoralists by year 5 (assumed full-scale program implementation) who own a minimum of 5 TLUs and who would probably lose their livelihoods altogether in the event of severe back-to-back droughts as experienced in 2016/17 in the Horn of Africa.

Key assumptions include the following.

- There are 1.98 billion TLUs across the eight countries and assuming that the coverage of the macro-level program would increase by 1% per annum of the total TLUs (camel, cattle and shoats) in each country, at year 5 full-scale implementation, 5% of the total TLUs would be insured, amounting to 9.9 million insured TLUs/year.
- On the assumption that this large-scale social protection program would ensure 5 TLUs per beneficiary, the program would directly benefit 1.98 million pastoralists by year 5. With an assumed average of six dependents per households, nearly 12 million people would be protected.
- The sum insured is based on the minimum feed requirements to sustain 1 TLU per month and is assumed at USD 10 per TLU per month or USD 120 per year per TLU if payouts are extended over both the normal wet seasons and dry seasons, e.g. for up to 12 months. For a pastoral household with 5 insured TLU, the annual sum insured would be USD 600 per household.
- At full implementation, the total sum insured would amount to USD 1.2 billion per year, representing the maximum payout in the event of an extreme regional drought.
- On the assumption that the premiums are 100% financed by governments and/or development partners and for a 1 in 7.5 return period (full payout) and assumed average commercial premium rate of 15%, the annual premium at year 5 full-scale implementation would amount to about USD 179 million per year.
- Additional support costs for registering the beneficiaries and their livestock and for awareness and insurance education and opening of banking or mobile money accounts is estimated at a further USD 19.8 million dollars by year 5.⁷⁷
- The estimated total annual budget for government support (including premium financing and support for start-up and operating costs) for a macro-level IBLI program at year 5 of full-scale implementation would thus amount to USD 198 million per year. Finally, over the five-year build-up program, the total costs would amount to USD 595 million (Table 1).

Table 1: Modified macro-level IBLI program: illustrative uptake and costs of premium subsidies and other implementation support costs over five years.

Item	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Insurance uptake and premium subsidy costs						
No. of insured TLUs	1,983,355	3,966,710	5,950,065	7,933,420	9,916,775	29,750,324
Total no. of insured pastoralists	396,671	793,342	1,190,013	1,586,684	1,983,355	5,950,065

⁷⁷For the purposes of this illustrative analysis, the additional support costs have been calculated as a fixed factor applied to the number of insured pastoralists and TLUs each year. This is obviously an over-simplification as in reality the design costs of the registration system and awareness creation system would be higher in the start-up years and would reduce over time as economies of scale are achieved. These illustrative costings will therefore require further refinement in due course.

Total sum insured (USD)	238,002,595	476,005,190	714,007,786	952,010,381	1,190,012,976	3,570,038,928
Item	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Indicative commercial premium rate/premium (USD)	35,700,389	71,400,779	107,101,168	142,801,557	178,501,946	535,505,839
Premium subsidy level/premium subsidy (USD)	35,700,389	71,400,779	107,101,168	142,801,557	178,501,946	535,505,839
Other areas of government support						
Support to start up and operational costs						
Electronic registration of pastoralists (USD/livestock unit)	1,983,355	3,966,710	5,950,065	7,933,420	9,916,775	29,750,324
Farmer awareness/training/mobile banking (USD/producer)	1,983,355	3,966,710	5,950,065	7,933,420	9,916,775	29,750,324
Sub-total start-up and operating expenses support (USD)	3,966,710	7,933,420	11,900,130	15,866,840	19,833,550	59,500,649
Total costs of financial support to livestock insurance (USD)	39,667,099	79,334,198	119,001,298	158,668,397	198,335,496	595,006,488

Source: Authors' estimates

At year 5 of full-scale implementation with 5% of the national herd insured in each country under the macro-level program, Ethiopia would have the largest IBLI program insuring more than 708,000 pastoralist households, while Djibouti would have the smallest program, protecting slightly less than 5,000 pastoralists. The annual cost of government support would range from a high of USD 71 million in Ethiopia to a low of USD 3 million in Djibouti at year 5 (Table 2).

Table 2: Modified macro-level IBLI program: illustrative uptake levels and costs of premium subsidies and other implementation support costs per country at year 5 (full-scale implementation).

Expansion plan and budget	Assumptions	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	South Sudan	Sudan	Uganda	Total
No. of insured TLUs	5%	24,931	154,193	3,541,995	1,441,881	855,495	752,832	2,265,605	879,844	9,916,775
Total no. of insured pastoralists	5	4,986	30,839	708,399	288,376	171,099	150,566	453,121	175,969	1,983,355
Total sum insured (USD)	120	2,991,690	18,503,154	425,039,376	173,025,672	102,659,364	90,339,858	271,872,600	105,581,262	1,190,012,976
Indicative commercial premium rate/premium (USD)	15%	448,754	2,775,473	63,755,906	25,953,851	15,398,905	13,550,979	40,780,890	15,837,189	178,501,946
Premium subsidy level (%)/premium subsidy (USD)	100%	448,754	2,775,473	63,755,906	25,953,851	15,398,905	13,550,979	40,780,890	15,837,189	178,501,946

Other areas of government support										
Support to start up and operational costs	Assumptions	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	South Sudan	Sudan	Uganda	Total
Electronic registration of livestock producers (USD/livestock unit)	1.0	24,931	154,193	3,541,995	1,441,881	855,495	752,832	2,265,605	879,844	9,916,775
Farmer awareness/training/mobile banking (USD/producer)	5	24,931	154,193	3,541,995	1,441,881	855,495	752,832	2,265,605	879,844	9,916,775
Sub-total start-up and operating expenses support (USD)		49,862	308,386	7,083,990	2,883,761	1,710,989	1,505,664	4,531,210	1,759,688	19,833,550
Total costs of financial support to livestock insurance (USD)		498,615	3,083,859	70,839,896	28,837,612	17,109,894	15,056,643	45,312,100	17,596,877	198,335,496

Source: Authors' estimates.

Voluntary micro-level IBLI for IGAD region

This sub-section presents illustrative costings for a voluntary micro-level IBLI cover in the eight IGAD countries.

Based on the demand and uptake experience from Kenya and Ethiopia for voluntary micro-level IBLI backed by partial (50%) premium subsidies, it is assumed that by year 5 of full-scale implementation, 2.5% of all TLUs (or 4.96 million TLUs) would be insured. On the assumption that these pastoralists insure an average of 5 TLUs, nearly one million pastoralists across the eight countries would purchase voluntary cover at year 5 (Table 3).

In order to promote voluntary IBLI uptake, it is assumed that governments would provide 50% premium subsidies. For the purposes of this analysis it is assumed that the micro-level voluntary IBLI programs will carry the same average 15% premium rate as for the macro-level program. It is recognized, however, that in reality the loadings for administrative and operating costs are higher for voluntary retail sales and therefore the final commercial premium may need to be higher to reflect these higher cost loadings. For voluntary sales, the annual partial premium subsidies would cost governments approximately USD 45 million at year 5 of full uptake and a total of USD 134 million over five years (Table 3). Additional administrative and operating support costs for registering the beneficiaries and their livestock and for awareness and insurance education and opening of banking or mobile money accounts are estimated at the same levels as for the modified macro-level program and would amount to USD 9.9 million dollars by year 5. The total annual cost of the financial support to premium and operating expenses for the micro-level program at year 5 of full-scale implementation would be USD 54.5 million and total support costs for the five years would amount to USD 164 million (Table 3).

Table 3: Micro-level voluntary IBLI program: illustrative uptake and costs of premium subsidies and other implementation support costs over five years.

	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Insurance uptake and premium subsidy costs						
No. of insured TLUs	991,677	1,983,355	2,975,032	3,966,710	4,958,387	14,875,162
Total no. of insured pastoralists	198,335	396,671	595,006	793,342	991,677	2,975,032
Total sum insured (USD)	119,001,298	238,002,595	357,003,893	476,005,190	595,006,488	1,785,019,464
Indicative commercial premium rate/premium (USD)	17,850,195	35,700,389	53,550,584	71,400,779	89,250,973	267,752,920
Premium subsidy level/premium subsidy (USD)	8,925,097	17,850,195	26,775,292	35,700,389	44,625,487	133,876,460
Other areas of government support						
Support to start up and operational costs	Year 1	Year 2	Year 3	Year 4	Year 5	Total
Electronic registration of pastoralists (USD/livestock unit)	991,677	1,983,355	2,975,032	3,966,710	4,958,387	14,875,162
Farmer awareness/training/mobile banking (USD/producer)	991,677	1,983,355	2,975,032	3,966,710	4,958,387	14,875,162
Sub-total start-up and operating expenses support (USD)	1,983,355	3,966,710	5,950,065	7,933,420	9,916,775	29,750,324
Total costs of financial support to livestock insurance (USD)	10,908,452	21,816,905	32,725,357	43,633,809	54,542,261	163,626,784

Source: Authors' estimates.

For voluntary micro-level IBLI sales, the largest program would again be in Ethiopia with about 354,000 pastoralists purchasing cover at year 5 of full-scale implementation. The cost of program financial support in Ethiopia would amount USD 19.5 million at full implementation in year 5. Conversely in Djibouti, only 2,500 pastoralists would purchase voluntary cover at year 5 and total support costs would only be USD 140,000 at year 5 (Table 4).

Table 4: Micro-level voluntary IBLI program: illustrative uptake levels and costs of premium subsidies and other implementation support costs by country in year 5 (full-scale implementation).

Expansion Plan and Budget	Assumptions	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	South Sudan	Sudan	Uganda	Total
No. of insured TLUs	2.5%	12,465	77,096	1,770,997	720,940	427,747	376,416	1,132,803	439,922	4,958,387
Total no. of insured pastoralists	5	2,493	15,419	354,199	144,188	85,549	75,283	226,561	87,984	991,677
Total sum insured (USD)	120	1,495,845	9,251,577	212,519,688	86,512,836	51,329,682	45,169,929	135,936,300	52,790,631	595,006,488
Indicative commercial premium rate/premium (USD)	15%	224,377	1,387,737	31,877,953	12,976,925	7,699,452	6,775,489	20,390,445	7,918,595	89,250,973

Expansion Plan and Budget	Assumptions	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	South Sudan	Sudan	Uganda	Total
Premium subsidy level (%)/ premium subsidy (USD)	50%	112,188	693,868	15,938,977	6,488,463	3,849,726	3,387,745	10,195,223	3,959,297	44,625,487
Other areas of government support										
Support for start-up and operational costs	Assumptions	Djibouti	Eritrea	Ethiopia	Kenya	Somalia	South Sudan	Sudan	Uganda	Total
Electronic registration of pastoralists (USD/ livestock unit)	1.0	12,465	77,096	1,770,997	720,940	427,747	376,416	1,132,803	439,922	4,958,388
Farmer awareness/ training/ mobile banking (USD/ producer)	5	12,465	77,096	1,770,997	720,940	427,747	376,416	1,132,803	439,922	4,958,392
Sub-total start-up and operating expenses support (USD)		24,931	154,193	3,541,995	1,441,881	855,495	752,832	2,265,605	879,844	9,916,775
Total costs of financial support to livestock insurance (USD)		137,119	848,061	19,480,971	7,930,343	4,705,221	4,140,577	12,460,828	4,839,141	54,542,261

Source: Authors estimates.

Annex 7: Graduation strategies for beneficiaries under modified macro-level IBLI

Over the past five years of implementation of KLIP and SIPE, there has been a major debate among public and private sector stakeholders, development partners and academics about whether or not these fully subsidized programs should continue indefinitely or whether beneficiaries should be graduated after a few years to only partially subsidized micro-level IBLI. The key questions that stakeholders have raised include the following.

- **How many years should an individual vulnerable pastoralist receive macro-level fully funded ‘free’ IBLI social protection cover for five TLUs (or number to be decided)?** Here it could be argued that a pastoralist household should only receive free IBLI cover for 3 to 5 years while the household receives financial and insurance literacy education. They will probably have received IBLI drought payouts in one or more year such that by the end of the agreed period they should be able to weigh up the costs and benefits of IBLI and make their own decisions whether to continue purchasing cover or not and then pay for their premiums in part or in full. The counter argument could be that until these vulnerable households can be shown to have graduated to a higher level of income and drought resilience, IBLI should continue to be provided free of charge: the danger being that if free IBLI is withdrawn, these vulnerable households will not be able to afford to pay IBLI premiums and the first major drought will result in major losses of their productive assets (livestock) and loss of their livelihoods and consumption. Until recently, the State Department of Livestock, the Ministry of Agriculture, Livestock and Fisheries in Kenya had not addressed this question and therefore the original 2,000 to 2,500 beneficiaries in each county have continued to receive free protection at each renewal – in Turkana and Wajir, where the program was launched in 2015/16 – for a maximum of five annual renewals.
- **Will it be feasible to graduate these vulnerable pastoralists off free IBLI social protection cover after an agreed number of years?** This a question that applies directly to SIPE in Somali Region of Ethiopia. Here SIPE fully funded beneficiaries are also better-off Productive Safety Net Program beneficiaries owning 5–11 TLUs. From the outset of the program there was a clear goal to graduate SIPE beneficiaries off free insurance after a number of years according to their income and resilience levels. In fact SIPE insurance is not free in Somali Region because benefitting pastoralist households are expected to contribute towards the costs of their premium in kind by carrying out an average of two extra days on public-sector risk reduction works under insurance for assets programs. In addition, in the separate R4 program, WFP requires that every farmer who receives subsidized crop weather index insurance to pay a proportion of their premium in cash. Finally, WFP is seeking to transfer responsibility for SIPE premium financing to the government. The insurance for assets approach could be considered in other IGAD countries if the IBLI programs can be aligned with conditional social safety net programs that include a public-sector works component.
- **Will it be feasible to develop a market-based micro-level IBLI capability in parallel with the fully funded large-scale social protection IBLI program and over time to transfer the beneficiaries of the fully funded program to purchasing private voluntary micro-level IBLI insurance with or without partial premium subsidies?** In Kenya and Ethiopia, there has, up to now, been no attempt to integrate the micro-level IBLI and modified-macro KLIP and SIPE programs. Section 4 noted that in Kenya under the annual tender process there was no incentive for insurers to invest in the promotion of voluntary IBLI retail sales either to KLIP beneficiaries with more than 5 TLUs or to other non-KLIP

pastoralists in the community. Now that the Government of Kenya has modified the tender to a three-year deal under which fully funded premiums will only operate for one more year before switching to 50% partial premium subsidies, there are strong incentives for the insurance companies to start investing in developing voluntary sales of IBLI to pastoralists either individually or through risk aggregators such as financial institutions, pastoral organizations, input dealers and offtake market traders.

The strategy of transitioning livestock insurance beneficiaries off the fully funded macro-level IBLI cover and into the commercial micro-level IBLI market could take several forms including the following.

1. Each beneficiary could receive free livestock insurance protection for up to 5 TLUs for a maximum of three or five years, following which the cover would be withdrawn and they would be expected to make their own decision whether to approach private livestock insurance providers for future cover.
2. A more gradual approach would be to reduce the number of TLUs for which free insurance cover is provided over time. For example, the pastoralists could be advised that they would receive free livestock insurance cover for a five-year period, and that in year 1 they would receive full protection for 5 TLUs and that the number of insured TLUs would be reduced by 1 TLU each year, such that by year 5, they would receive fully funded protection for 1 TLU only.
3. Moving gradually from fully subsidized to partial subsidy and eventually to full self-funding (based on the WFP R4 experience).

There are several potential advantages of having a clear strategy for the provision of fully funded cover for a given number of years only, including the following.

1. Pastoralists could be clearly advised that they would only receive free IBLI livestock cover for a fixed number of years e.g. three to five years.
2. By providing fixed-term free insurance, the funding organizations would be able to bring new vulnerable pastoralists into the program each year for an agreed budget and enable them to benefit from the program over a three- to five-year period.
3. It would be much easier to budget the costs of IBLI premiums over time in the knowledge that individual beneficiaries would only receive fully funded cover for three to five years.

The potential drawbacks of this approach include the following.

1. Some or indeed many vulnerable pastoralist households may not have adequate disposable cash income to purchase livestock insurance by themselves. Therefore, unless development partners and/or governments decide to introduce a system of partial premium subsidy support, these pastoralists may cease to purchase livestock insurance and remain very exposed to the loss of their livelihoods and incomes in the next severe droughts.
2. Unless a private commercial livestock insurance market can be developed in the pastoral regions, the withdrawal of a fully funded macro-level IBLI program after three to five years will leave pastoralists very exposed to the next severe drought year.

In Annex 6, the costs of a macro-level IBLI program are presented, assuming governments and/or donors provided fully subsidized premium subsidies over five years. An alternative scenario is presented below where full premium subsidies are replaced by partial premium subsidies over time. Under the modelled scenario, it is assumed a pastoralist receives full premium subsidies for 5 TLUs in year 1, but in successive years this is reduced to 4, 3, 2 and 1 fully subsidized TLU at year 5. The same pastoralist receives a 50% partial premium subsidy on each TLU that no longer qualifies for full premium subsidies. This would result in major cost savings by year 5 of full implementation: instead of paying USD 178 million in full premium subsidies for the 1.98 million beneficiaries and their 9.9 million insured TLUs, the reducing premium subsidy regime would cost only USD 142 million or a cost saving of 20% (Table 1). In this instance at

year 5, 60% of the insured TLUs would qualify for 100% premium subsidy and 40% for partial 50% premium subsidies. There are obviously many other permutations that can be modelled for a reduced premium subsidy regime on the modified macro-level IBLI program.

Table 1: Effect of reducing the macro-level IBLI program premium subsidies from 100% to 50% over five years.

Premium subsidy options	Year 1	Year 2	Year 3	Year 4	Year 5	Total
No. of benefitting pastoralists/year	396,671	793,342	1,190,013	1,586,684	1,983,355	
Option 1. Fully subsidized premium for 5 TLUs for five years	35,700,389	71,400,779	107,101,168	142,801,557	178,501,946	535,505,839
Option 2. Reducing number of fully subsidized TLUs over 5 years						
Cost of full premium subsidies	35,700,389	64,260,701	85,680,934	99,961,090	107,101,168	392,704,282
Cost of partial premium subsidies	0	3,570,038	10,710,116	21,420,233	35,700,389	71,400,778.56
Total premium subsidies (Option 2)	35,700,389	67,830,740	96,391,051	121,381,324	142,801,557	464,105,061
Saving (%)	0	5	10	15	20	

Source: Authors' estimates.

In summary, in the design of an IBLI program for the IGAD region, governments, development partners and other stakeholders should draw up a clear policy on the provision of IBLI premium subsidies. There appears to be a clear need under a modified macro-level program for vulnerable pastoralists to offer all benefiting households fully funded free IBLI for an agreed number of years only and to require that pastoralists increasingly share in the costs of their premiums over time by moving to a voluntary micro-level IBLI program. This should be backed up by a regime of partial (e.g. 50%) premium subsidies both to make insurance affordable for all pastoralists and to act as an incentive for them to take up micro-level IBLI.

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