

**STOA – PRRI Seminar on the impact of EU GMO Regulations on
research in biotechnology for the public good
25 February 2010, Brussels, Belgium**

STOA-PRRI Summary report

On 25 February 2010, the Science and Technology Options Assessment Panel of the European Parliament (STOA), and the Public Research and Regulation Initiative (PRRI) organised a seminar on the impact of EU GMO Regulations on research in biotechnology for the public good. The seminar, which was held in the European Parliament, Brussels, was attended by over 150 participants from the European Parliament, the European Commission, Governments, Permanent Representations to the EU, academia, government research institutes, international research institutes, and people from various non governmental organizations and companies.

The seminar was co-chaired by Prof. António Correia de Campos, MEP, STOA Vice-Chairman and Em. Prof. Marc van Montagu, PRRI Chairman.



Introductions

Prof. António Correia de Campos, Member of the European Parliament, co-chaired the event and made a general introduction to the importance of Biotechnology research in the context of the Lisbon strategy goals for the EU. It was referred that new biotech products and services have been helping to generate new qualified jobs, delivering significant economic impact and offering new solutions for human health, industry, and the environment. Despite this, biotechnology still has a great potential to be realized in the agro-food sector. This has been a controversial area for policy-makers, industry, and the civil society, and one that raises significant ethical, safety and environmental

dilemmas that need to be carefully considered. The introduction outlined the main historical progresses on the EU legal framework on GMOs and the way it attempted to solve such concerns.



In his introduction Mr. Correia de Campos also referred to some of the negative impacts of such legislation, namely at the level of the competitiveness of EU research, creating unnecessary research concentration in the larger enterprises, and to the policy solutions on the table at Council level.

He hoped for this conference to present an opportunity for scientific support for the policy-making process in this area: a policy framework that should favour free and competitive research and innovation, promote economic competitiveness for Europe and one that responds to public concerns by ensuring high standards of health and environmental protection.

Em. Prof. Marc Van Montagu thanked STOA for hosting this event to explore together with scientists how current regulations impact public sector research in biotechnology. He introduced PRRI, which is a world-wide organisation of scientists in the public sector with the aims to inform scientists about regulations and to assist scientists to participate in discussions on regulations. A key objective of PRRI is to bring more science to the table. Prof. Van Montagu reminded the participants of the importance of biotechnology and the bioeconomy in finding solutions for the immense challenges the world society is facing today. A key aspect of the whole debate society's trust in science, which is influenced by the fact that repeated reference to strict and stricter regulations confirm the public's fear that biotechnology is dangerous. He therefore welcomed the opportunity of this debate, and invited the participants to not only listen to the presentations but also to discuss together where the problems with regulations lie and how they can be solved.



Prof. El-Beltagy, Chair of the Global Forum on Agricultural Research (GFAR): “Biotechnology in the context of global challenges in the production of food, feed, fibre and fuel”.

Prof. El-Beltagy gave an opening lecture in which he placed biotechnology in the context of global challenges in the production of food, feed, fibre and fuel. The number of undernourished people in the world has risen to over 1 billion, and that in the years to come, this situation will be compounded by the growth of world population; increasing demand for food, feed, and fibre in emerging economies; growing shortage of agricultural land and fresh water; increasing global demand for renewable fuels, climate change and environmental degradation. The presentation illustrated in some detail how climate change will impact humans, food production and nature. Conclusion: if a ‘tsunami of misery’ is to be diverted, then mankind will have to employ the best of existing and new technologies in agriculture, including remote sensing, biotechnology and genetic engineering, genetic and proteomics, simulation modelling, information technology, new energy-saving techniques for desalination and water transportation, and nanotechnology.

Ms. Maive Rute, Director for the Directorate Biotechnology, Agriculture and Fisheries and Food of the European Commission presented the aims of the knowledge-based bio-economy, with a particular focus on biotechnology in primary production. Ms. Rute placed the topic of the seminar in the broader context of the bio-economy, which is a sustainable economy using renewable resources, which applies progress in biosciences and which encompasses agriculture, forestry, fisheries, food, chemicals and energy sectors. The importance of the bio-economy today in the EU is estimated to be EUR 1.5 trillion of annual turnover, employing around 22 million people. To achieve the sustainability goals in primary production requires to: reduce inputs (e.g. fertilizers, plant protection products, water), increase outputs (e.g. yield and quality), increase land use (e.g. cultivation on marginal lands), manage production of food/feed alongside renewable biomaterials, maintain and improve soil fertility, and protect biodiversity. Ms. Rute underlined that only by considering risks and benefits of all current and future technologies, including biotechnologies, achieving the maximum could become a reality. In this context, DG Research has funded through the Research Framework Programmes in about 25 years more than 200 million Euros of its budget for over 130 FP public research projects on GMOs, involving EU and international researchers. In total, since 1985, more than 300 million Euros have been spent for these public research projects, focussing mainly on: environmental effects of GMOs, GMOs and food safety, renewable resources, risk assessment and management, policy support and communication. One of the relevant conclusions of the research conducted since 1985 was that no major risks have been identified by any of the projects. In closing her presentation, Ms. Rute announced the Belgian EU Presidency high-level international conference “The Knowledge Based Bio-Economy 2020: Turning challenges into opportunities” 14th September 2010.

Dr. Emilio Rodriguez European (Commission of the JRC Institute for Prospective Technological Studies (IPTS) of the European Commission): “Experiences with GM crops to date: economic and productivity impacts”.

Dr. Rodriguez discussed research on the economic and productivity impacts of the main genetically modified (GM) crops that are currently available to farmers, i.e. soybeans, maize, cotton and rapeseed with insect resistance and/or herbicide tolerance. Since the first commercial planting in 1996, the global acreage grown with these crops has increased drastically, up to 120 million hectares in 2008. In discussing the insect resistant crops (“Bt crops”), Dr. Rodriguez discussed research on the economic and productivity impacts of Bt cotton in India, China and Spain, and of Bt maize in Spain. Research on insect-resistant GM crops (Bt cotton, Bt maize, CRW maize) shows that they increase yield by protecting plants from pest, have been adopted by small and industrial farmers alike, reduce pesticide use, need to adapt to local varieties to ensure efficacy, have a positive impact on income. The question of sustainability of positive effects in the future needs to be addressed, e.g. management of refuges, resistance. Research on Herbicide Tolerant Crops (HT soybean, HT rape seed, and HT Sugar beat) shows that they are in general adopted in Western countries (low adoption in developing world), are neutral with respect to yields in most cases; reduce costs of fuel, weed control, labour; increase seed costs; final effect on gross margin small, but so widely adopted because of ease of management and resulting higher income off-farm.

Dr. Piero Morandini, PRRI member, University of Milan, Italy. “Public researchers’ experiences with GMO regulations”.

Building on the preceding presentations, Dr. Morandini underlined that genetic modification in plants is a tool with the same goal as conventional breeding: to develop better varieties for farmers, the environment and consumers. As many other tools, genetic modification is neither inherently risky nor safe. GM crops approved to date are as safe as, or safer than, conventional crops and have demonstrated environmental and other benefits.

PRRI supports biosafety regulations that allow authorities to make informed and balanced decisions in order to maximize the benefits of biotechnology and minimize risks. Biosafety regulations must therefore be transparent, science based, proportionate and predictable. A PRRI survey shows that public researchers in many EU countries experience that the current regulatory situation often unduly hinders research. This is particularly felt in field research. Field trials are an essential stage in the development of new varieties. Problems are experienced with the EU regulatory system, the way in which the EU system is transposed into national regulations and the way in which EU and national rules are executed in practice. Examples of problems are: Regulations that stay too long in draft form; provisions that are inconsistent with the EU system; restrictions or bans that lack scientific basis; fees that are prohibitive for public research; undifferentiated information requirements; requirements to publish locations of field trials that result in destruction of research; no mechanism for exemptions on EU level; conflicting interpretations and policies between different bodies; requests for additional data that have no basis in risk assessment; ignoring the advice of the scientific bodies such as EFSA; decisions not taken within the legal time frames; disproportionate or unworkable conditions in permits; mandatory insurance, ineffective government action against destruction of field trials. The consequences of these challenges is that research is becoming increasingly expensive due to costs for additional requests for data and for security measures, important research does not get beyond the greenhouse stage, and important research and safety data are often lost because of the destruction of field trials. Consequently, as was illustrated by a number of examples, much needed public research is increasingly and unnecessarily delayed, ended, moved abroad or not started at all.

PRRI offers the following recommendations:

- EU Member States should adhere to the rules they themselves created, e.g. decisions within the time frames, and based on scientifically sound risk assessment. Scientifically sound means looking at the whole of the scientific data available, not only at hand picked cases.
- Additional data should only be requested if they are pertinent to the risk assessment.
- Remove unqualified bans from regulations.
- Permit conditions should be proportionate to risk.
- Environmental benefits should be taken into account.
- Establish differentiated procedures.
- React effectively to destruction of field trials
- When amending the EU regulatory system: Re-introduce mechanisms for simplified procedures and introduce a mechanism for exemption of categories

of GMOs that are not likely to have adverse impacts, such as certain pest resistant crops.

Discussion

Moderator: Dr. Vittorio Prodi, MEP, STOA Panel Member



A participant from Malaysia observed: EU is seen as a role model for many emerging economies. All decisions on law, regulation policies, on biosafety and the way Risk Assessment and Risk Management carried out in these countries mirror what is done in EU. So the EU law makers have big responsibilities in leading the developing countries. It is important that all discussions, deliberations, decisions and debates that take place in the European Parliament impact the progress of developing countries. I hope for a continual dialogue between scientists and law makers to address global crisis in food, feed, fuel and fiber.

Points raised by the participants included:

- How to overcome negative perceptions with regard to science and new technologies in Europe;
- What to say to young researchers in biotechnology;
- Freedom of science, the question who is responsible for education;
- Need for a science based discussion in the Member States;
- Europe is lagging behind in research – increasing research is a priority;
- Freedom of choice in cultivating GM crops;
- Co-existence;
- Europe's support for biotechnology for developing countries;
- The need for research on the impacts of GM cultivation, based on peer reviewed data;
- Plant development programmes, e.g. to prevent resistance;
- Effects of growing GM crops on organic agriculture;
- Organic farmers should embrace GM crops as they reduce the use of pesticides;
- Economic consequences of non-approval of GM crops in EU;
- Education of future generations of scientists;
- The impact of public research on regulations;
- EU Framework Programme support towards life science innovation;
- The extent to which EU Member States can impose restrictions on GM crops and establish GM-free zones;
- The importance of biotechnology for developing countries, reference to the FAO meeting on this topic in March 2010;
- Public researchers play a key role in changing public opinion;
- The reason that to date the GM crops available are mainly 4 crops with 2 traits due to the high requirements set by regulators so only large multinationals can comply with.