



## Growing Support for GM Crops in Europe



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“Used properly, the advanced plant-breeding technique of GM promises effective ways to protect or increase crop yields. It can also combat the damaging effects of unpredictable weather and disease on crops. It has the potential to reduce fertilizer and chemical use, improve the **efficiency of agricultural production** and reduce post-harvest losses..... The use of more precise technology and the greater regulatory scrutiny probably make GMOs even safer than conventional plants and food.” – Rt Hon. Owen Paterson, Environment Secretary, UK.

*Rt Hon. Owen Paterson*

## Introduction

**K**ey policy makers and reputable institutions in EU have voiced their support for research, development and commercialization of GM crops in the continent. While addressing a pre-G8 event on June 14, 2013, the UK Prime Minister, David Cameron, urged the EU to be open to scientific arguments as pertains to biotech crops. Additionally, the UK Environment Secretary, Rt Hon. Owen Paterson said Europe’s attitude has generated unwarranted resistance in

developing nations that need the technology most. In its 2013 report, the European Academies of Science Advisory Council also cautioned that EU’s stringent regulatory system is constraining GM crops activities.

The European Union (EU) was once a leader in research and development of genetically modified (GM) crops, with both major public research institutions and private groups involved in agricultural biotechnology. This has however changed due to complex and lengthy policy

framework, driven by well-orchestrated anti-biotech non-governmental organizations (NGOs) with support from sections of government. The European Union is generally considered as having the world’s most stringent regulatory system on GMOs which has contributed to the slowing down of research, development and adoption of GM crops. Every year there is a higher number of product applications compared to approvals leading to a backlog.



## Commercialized GM Crops in EU

Currently, five European countries namely Spain, Portugal, Czechia, Slovakia and Romania are planting GM maize. In 2013, the hectareage under biotech maize increased from 129,071 to 143,013 hectares which is equivalent to 15% growth. Spain was by far the largest adopter planting 94% of the total Bt maize hectareage in the EU. Portugal was lower by approximately 1,000 hectares due to a seed shortage, and Romania was the same as 2012. The other countries, Czechia and Slovakia, planted lower and small hectareages attributed to onerous and over-demanding EU reporting procedures for farmers.

Although GM maize variety MON810 is approved for commercial cultivation in the entire EU, several Member States (MS) have implemented national bans on it. These include France and Germany, major corn producers, who previously produced Bt maize. Poland too was a producer of Bt corn until 2012, but banned cultivation in January 2013.



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## GM Crop Products Importation

The European Union is a major importer of GM soybean and GM corn mainly for livestock consumption.

The primary category of biotechnology-derived products imported consists of soybean products. About 70 percent of soybean meal consumed in the EU is imported and 80 percent of this meal is produced from GM soybeans.

According to United States Department of Agriculture, on average, EU imports soybean meal and soybeans amounting to \$9 billion and \$6.5 billion per year, respectively. Additionally, 25% of corn products imported by Europe are of biotech origin. These imports come from Argentina, Brazil and USA, which are among the mega biotech countries.

## Open-field Testing

**N**ine EU Member States are currently conducting open-field testing of a variety of biotech crops. These are Belgium, Czech Republic, France, Ireland, Romania, Slovakia, Spain, the Netherlands, and the United Kingdom.

Crops being evaluated include barley, corn, cotton, flax, peas, plum, poplar, potato, sugar beet, tobacco, tomatoes and wheat.

## Research and Development of Biotech Crops

**E**urope is home to world-class public and private developers in agricultural biotechnology. They include private companies such as BASF, Bayer Crop Science and Syngenta. They however supply GM seeds to markets outside EU where acceptance is high. Public institutions are also conducting basic research but very limited product development.

In its current form, taxpayer-supported research is not likely to lead to short- or medium-term cultivation of GM crops in Europe. Very little emphasis is directed towards product development end of the research 'pipeline.' Furthermore, the complex regulatory system is too expensive for public researchers.







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## Constraints to Agricultural Biotechnology in EU

**D**espite the European Commission's priority for a sustainable bioeconomy that includes biotechnology, regulatory constraints and pressure by anti-biotech advocacy groups have significantly reduced research. Programs are often limited to basic research inside the laboratory in both plant and animal biotechnology and have discouraged open-field testing initiatives. A number of major private developers have left the EU to conduct experiments

in other regions where their work is not threatened by vandalism.

Several policy factors are barriers to trade of biotech products in the EU. These include slow pace of approvals of new biotech products, socio-economic considerations by biosafety authorities and labelling regulations.

Labelling is particularly a significant barrier to import of biotech products into the EU. The regulation that has been in place since 2003 requires that all food and feed produced from or containing biotech events be labelled as such. Conventional

food and feed that contain over 0.9 percent of biotech events adventitiously must be similarly labelled. Many manufacturers and distributors have reformulated in order to avoid such labelling, in fear of reduced purchases by consumers and negative publicity by NGOs. In addition, there are voluntary negative labelling ("biotech-free" logos) initiatives in several MS. These include national systems in Austria, France and Germany, and private initiatives in a wider range of MS. Products involved include corn, soybean, meat, dairy products and eggs.



**Planting the future: opportunities and challenges for using crop genetic improvement technologies for sustainable agriculture**



EASAC policy report 23

## The European Academies Science Advisory Council (EASAC) Cautions on Regulatory System

The European Academies Science Advisory Council (EASAC) has cautioned EU Member States of losing a competitive edge in agricultural innovations due to stringent regulatory systems that are very expensive to implement. In its 2013 report on the use of genetic engineering technology in agriculture EASAC states that "... a time-consuming and expensive regulatory framework in the EU, compounded by politicization of decision-making by Member

States and other policy inconsistencies, has tended to act as an impediment to the sustainable intensification of agriculture."

The high costs associated with the current regulatory frameworks also promote monopolies since only high-end and multinational companies can afford them hence locking out small companies and public institutions. The report further points out that previously, EU agricultural policy focused on constraining food production

but now the growing population requires increased production of food, feed and fibre. Achieving this needs development of crop varieties that can withstand weather vagaries and make efficient use of diminishing resources. Modern biotechnology is one of the tools that have shown great potential in contributing towards this course. The EASAC report notes that there is compelling evidence that GM crops can contribute to sustainable development goals with benefits to farmers, consumers, the environment and the economy. Additionally, there is no validated evidence that GM crops have greater adverse impact on health and the environment than any other crops developed by alternative technologies used in plant breeding. However, successful adoption of GM crops requires adherence to good agronomic practices.

EASAC recommends that all risk assessment must be evidence-based and should focus on the product not the technology. "Decisions on regulatory oversight have to be based on scientific principles and accumulated experience, and it is highly desirable to have consistent, proportionate regulatory regimes worldwide to facilitate both scientific

exchange and trade," states the report. There is also need for sustained efforts to improve public awareness on the technology hence facilitate informed choices. The goal should be moving from a situation where the passive consumer merely tolerates technologies to one where the active citizen appreciates and embraces technologies for the benefits they provide.

## UK's Prime Minister Calls for Reconsideration

The United Kingdom's Prime Minister, Mr. David Cameron augmented EASAC's sentiments when addressing entrepreneurs and businessmen at a pre-G8 event on June 14, 2013. Mr. Cameron urged the UK to nurture a pro-science culture.

"I think there are a number of subjects there that we need to take on, I think it is time to look again at the whole issue of GM food. We need to be open to arguments from science" he said.



## Italian Scientists Support History of Safe Use of Biotech Crops

Numerous studies over the years have concluded that GM crops currently in the market are safe for food/feed use and do not pose any risks to the environment. According to a report published in September 2013 by a team of Italian scientists led by Alessandro Nicolia, an applied biologist at the University of Perugia in Italy, the safety of GM crops is crucial for their adoption and

has been the subject of intense research work often ignored in the public debate.

A total of 1,783 research papers, reviews, relevant opinions, and reports published between 2002 and 2012 were evaluated. These covered all aspects of GM crop safety, from how the crops interact with the environment, to how they could potentially affect humans and animals

who consume them.

In their article entitled "An overview of the last 10 years of genetically engineered crop safety research" and published in the journal *Critical Reviews in Biotechnology*, the team concluded that the scientific research conducted so far has not detected any significant hazards directly connected with the use of genetically engineered crops.





## Former British Anti-GM Activist Apologizes to Farmers

Former British anti-GM activist, Mr. Mark Lynas apologized to farmers and the science community for having spent several years ripping up GM crops. He regretted helping form the anti-GM movement back in the mid 1990s, and demonizing an important technological option which can be used to benefit the environment.

While addressing participants at the Oxford Farming Conference held on January 2, 2013, Mr. Lynas said that his anti-GM activism was explicitly anti-science. "We employed a lot of imagery about scientists in their labs cackling demonically as they tinkered with the very building blocks of life. Hence the Frankenstein food tag – this absolutely was about deep-seated fears of scientific powers being used secretly for unnatural ends. What we didn't realize at the time was that the real Frankenstein's monster was

not GM technology, but our reaction against it," he added. Mr. Lynas said that through reading, his cherished beliefs about GM turned out to be little more than green urban myths.

- I had assumed that it would increase the use of chemicals. It turned out that pest-resistant cotton and maize needed less insecticide.
- I had assumed that GM benefited only the big companies. It turned out that billions of dollars of benefits were accruing to farmers needing fewer inputs.
- I had assumed that Terminator Technology was robbing farmers of the right to save seed. It turned out that hybrids did that long ago, and that Terminator was only a concept.

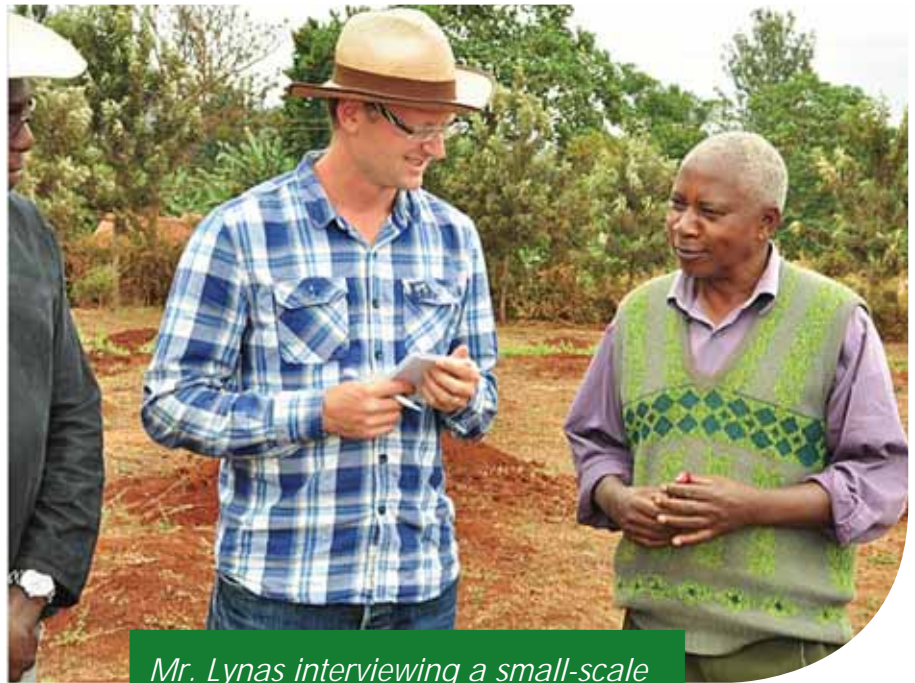
- I had assumed that no-one wanted GM. Actually what happened was that Bt cotton was pirated into India and roundup ready soya into Brazil because farmers were so eager to use them.
- I had assumed that GM was dangerous. It turned out that it was safer and more precise than conventional breeding using mutagenesis for example; GM just moves a couple of genes, whereas conventional breeding mucks about with the entire genome in a trial and error way.

Mr. Lynas pointed out that anti-biotech activism has not stopped biotechnology but has made it prohibitively expensive to all but the very biggest corporations. "It now costs tens of millions to get a crop through the regulatory systems in different countries. In fact the latest figures I've just seen from



Croplife suggest it costs \$139 million to move from discovering a new crop trait to full commercialization, so open-source or public sector biotech really does not stand a chance," he said. It is therefore ironical for anti-biotech campaigners to complain about GM crops only being marketed by big corporations yet this is a situation they have done more than anyone to help bring about. Criticizing the EU regulatory system, Mark said that many GM crops have been waiting a decade or more for approval but are permanently held up by twisted domestic politics of anti-biotech countries like France and Austria.

Mark reiterated the importance of seeking evidence before making conclusions. "Most importantly farmers should be free to choose what kind of technologies they want to adopt. If you think the old ways are the best, that's fine. You have that right. What you don't have the right to do is to stand in the way of others who hope and strive for ways of doing things differently, and hopefully better," he concluded.



*Mr. Lynas interviewing a small-scale farmer in Central Kenya*

## Mark Lynas Cautions Africa Against Emulating Europe

Addressing a public lecture at the Kenyatta International Conference Centre (K.I.C.C) on July 25, 2013, Mark Lynas cautioned Kenya and other African nations against emulating EU. "You do not develop an economy by squeezing out innovation and the deployment of new technologies. You do not encourage growth by sending out a signal that you are not open to investment in new sectors. You do not create jobs by sending whole new industries overseas to locations where policy is not so restrictive," he said.

Mr. Lynas added that governments should not tie the hands of farmers behind their backs when they want to produce sufficient food for the ever-increasing population. Farmers all over the world should not be denied the right to choose what seed they want to plant and which crops.

The former anti-GM activist urged Kenyan policy makers to give farmers access to all available technologies, including genetic modification, so that they can select what suits them.

# EU's Stand on GM Crops Impacts Africa

According to EASAC, stringent EU regulations are impeding research and commercialization of GM crops in most African countries. First of all, some African countries have adopted the highly precautionary approach towards GM crops due to economic ties with EU countries.

Secondly, African nations are wary of losing their export markets if EU refuses GM products once adopted in Africa. For instance, Egypt and South Africa stopped the development of Bt potato for fear of losing European markets.

Thirdly, there is an active involvement of European-based or European-influenced NGOs in the anti-GM campaign in Africa leading to public confusion and controversy at the political level. The impact of EU's position on Africa was also pointed out by the UK's Environment Secretary, the Rt Hon. Owen Paterson, when he

delivered a speech supporting GM crops cultivation on June 20, 2013 at the Rothamsted Research Institute. "Europe's attitude to GM is misinterpreted as a sign that the technology is dangerous. This has generated unwarranted resistance to the technology in the parts of the world that most need access to agricultural innovations. Developing countries also fear being locked out of EU markets if they use a GM crop that is unapproved in the EU," he said. The negative sentiments towards biotechnology among European nations are ironical since they are already importing GM corn and soybean from mega biotech countries such as Argentina,





Brazil and the USA.

It is high time African nations realized that the negative attitudes towards GM crops in most EU countries are not science-based. Therefore, it will be disadvantageous to continue adopting Europe-inspired unrealistic policies that suffocate research instead of providing an enabling environment.

Europe didn't want to see GM material entering from Africa when it was saying 'No' to North American GM products, so EU pressurized African countries not to grow GM crops to the great detriment of Africa.



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Prof. Calestous Juma, Harvard University

## Conclusion

Adoption of GM crops has been low in most European countries due to a highly cautious regulatory framework based on evaluation of the process rather than the product. Misinformation from anti-GM movements, mostly from Europe, has also contributed immensely to this situation.

It is unfortunate that governments and pressure groups in food secure nations are advising developing nations to reject GM crops despite having embraced genetic engineering in medicine. The divergence in acceptance of medical versus agricultural GMOs confirms that it is not the practice of

genetic engineering that rich European countries find unpleasant but instead the purpose to which this science is applied. When applied in the improvement of human health, it is strongly supported, but when applied for the purpose of increasing agricultural productivity, it is challenged. Such preferences make perfect practical sense in rich countries where food is abundant and there is no incentive to produce more. The priority is on better health care and increasing the longevity of life. This, however, is not the case in Africa where millions of people face hunger as shown in the map on the previous page. We should not apply double standards in the

adoption of GM technology since the techniques used are both the same in agriculture and medicine.

The new developments in Europe are something African leaders should take seriously since EU's strict stance has had a spillover to the continent with some countries having adopted similar systems.

African countries should recognize that each continent has its unique challenges and needs hence the importance of coming up with home-made policies that will spur food security and socioeconomic development.

## Sources

1. James, Clive. 2013. Global Status of Commercialized Biotech/GM Crops: 2013. ISAAA Brief No. 46. ISAAA: Ithaca, NY.
2. [http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Agricultural%20Biotechnology%20Annual\\_Paris\\_EU-27\\_7-12-2013.pdf](http://gain.fas.usda.gov/Recent%20GAIN%20Publications/Agricultural%20Biotechnology%20Annual_Paris_EU-27_7-12-2013.pdf)
3. <http://www.easac.eu/home/reports-and-statements/detail-view/article/planting-the.html>
4. <http://www.telegraph.co.uk/news/worldnews/g8/10121599/David-Cameron-It-is-time-to-look-again-at-GM-food.html>
5. <http://www.marklynas.org/2013/01/lecture-to-oxford-farming-conference-3-january-2013/#sthash.6hFNmSML.dpuf>
6. <https://www.gov.uk/government/speeches/rt-hon-owen-paterson-mp-speech-to-rothamsted-research>
7. Paarlberg, R. 2008. Starved for Science: How biotechnology is being kept out of Africa. Cambridge -MA. London: Harvard University Press



## ABOUT OFAB

The Open Forum on Agricultural Biotechnology in Africa (OFAB) is a platform that brings together stakeholders in agricultural biotechnology to share knowledge and experiences on all aspects of the technology. It is currently operational in eight countries- Burkina Faso, Egypt, Ghana, Kenya, Nigeria, Tanzania, Uganda and Zimbabwe. The Kenya Chapter is hosted by the International Service for the Acquisition of Agri-biotech Applications (ISAAA) *AfriCenter* under a collaborative agreement with the African Agricultural Technology Foundation (AATF).

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