



SUSTAINABILITY FOCUS

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GMOs in agriculture: How do European companies prevent impacts on biodiversity

On March 9th 2012, seven European countries – Belgium, the United Kingdom, Bulgaria, France, Germany, Ireland and Slovakia – blocked a proposal by the Danish EU presidency to allow the cultivation of genetically modified crops on the continent. Despite already having one of the most stringent legislation frameworks with regards to Genetically Modified Organisms (GMOs), this topic and particularly GMOs' potential impacts on biodiversity is still facing growing opposition and stakeholders' scrutiny across Europe.

In Vigeo's latest CSR rating of the European Food, Beverage, Tobacco and Forest Products & Paper sectors, we found an overall lack of transparency in companies' reporting on their use of GMOs in their operations and in their sourced raw materials. Companies in these sectors operate between designers of genetically modified seeds (e.g. chemical companies) and distributors of finished products (e.g. specialised retailers, supermarkets). A majority of companies in these sectors do not disclose information on any commitment or measures in place to prevent GMO cross-contamination. Even though the environmental impacts of GMOs on biodiversity are still debated, companies in the European agricultural sector do not provide sufficient information on their handling of related reputational, legal and operational risks. Whilst some good practices have been identified in terms of implementation, these remain scarce.

Vigeo's fourth Sustainability Focus will concentrate on the topic of 'GMOs in agriculture' in order to provide insight into the concerns of stakeholders, the related business risks and opportunities and companies' reporting on their handling of GMOs.



Introduction

The beginning of 2012 has brought a new turn in the development and manufacturing of Genetically Modified Organisms (GMOs) in Europe. BASF declared that, considering the European public's opposition, it was stopping the development of GMOs (e.g. Amflora Potato) for the European market and transferring its R&D activities to the US⁽¹⁾. Monsanto more recently announced that it was not planning to sell its GM maize (MON 810) in France as the French government reintroduced the moratorium on the growing of MON 810⁽²⁾.

For companies using GMOs in the agricultural sector, attention in the public debate is focused on the potential advantages (e.g. improvement of productivity, fight against hunger, resistance to droughts and pests) versus the potential risks (e.g. toxicity, deterioration of biodiversity, unknown health impacts, food security).

In Europe in 2011, GMOs were cultivated on 0.1% of agricultural land⁽³⁾, and worldwide 14 million small and large farmers⁽⁴⁾ benefit from biotech crops⁽⁵⁾.

In this paper, Vigeo will provide insight into EU regulations, existing national bans and the concerns of stakeholders, as well as highlighting the business risks and opportunities and analysing Vigeo's 2011 findings on how leading European Food, Beverage, Tobacco and Forest Products & Paper companies handle the related environmental impacts of GMOs on biodiversity.

Regulation and bans

A GMO is an organism for which the natural properties have been genetically modified in order to integrate new characteristics, such as pest resistance. Considering the potential impacts of GMOs on the environment, on human health, and on society at large, international organisations such as the United Nations, the Organisation for Economic and Co-operation and Development (OECD), the World Trade Organisation, the Food and Agriculture Organisation (FAO), the European Commission, and the World Health Organisation (WHO) have regulated GMOs in their standards, conventions, guidelines or agreements⁽⁶⁾.

The main texts regulating GMOs in Europe⁽⁷⁾ provide harmonised procedures for risk as-

essment and authorisation of genetically modified ('GM') food and feed that are efficient, time-limited, and transparent. They also ensure the labelling of GM food and feed in order to respond to consumers' concerns⁽⁸⁾.

The European Food Safety agency names six European countries which have banned or installed a moratorium on GMOs on their territory⁽⁹⁾ under the precautionary principle or the "safeguard clause"⁽¹⁰⁾⁽¹¹⁾: Austria, France, Greece, Luxemburg, Germany and Hungary. Other countries, such as Romania and Poland, have banned the cultivation of particular GM seeds such as Monsanto's maize MON 810.

Stakeholder concerns

The release of GMOs into the environment could have many consequences that are not yet quantified nor qualified. **No study has led to clear conclusions on the mid- to long-term impacts of GMOs on the environment or human health.**

On the one hand, advocates (such as GM-seeds manufacturers or GMO farmers) high-

light the **potential increased productivity of GM crops** including the possibility of having certain GM crops that resist climate change events and certain pests. Organisations like the Bill and Melinda Gates Foundation are among those who see GMOs as part of the solution to reduce hunger⁽¹²⁾ particularly in the context of an increasing global population⁽¹³⁾.



On the other hand, opponents (such as organic and conventional farmers, specialised NGOs or some consumers) firstly question the truthfulness of these claimed opportunities⁽¹⁴⁾ and secondly raise **concerns over the protection of biodiversity and the absence of risk assessments on the environment and human health**. Critics coming from NGOs such as Greenpeace⁽¹⁵⁾, Friends of the Earth⁽¹⁶⁾ and Oxfam⁽¹⁷⁾ sometimes highlight studies that have linked GMOs with negative health impacts. For example, UK Greenpeace campaigners against GMOs called in 2007 for trials of GM potatoes to be halted based on the findings of a Russian study showing more evidence of links with cancers in laboratory rats⁽¹⁸⁾. This study led David Miliband, former UK

Secretary of State for Environment, Food and Rural Affairs to withdraw permission for new trials⁽¹⁹⁾. Similarly, a study released in 2010 by the International Journal of Biological Sciences⁽²⁰⁾ showed links between three varieties of Monsanto's GM-corn (MON 863, MON 810, NK 603) and organ damage in rats.

Other stakeholders denounce the **exploitation of farmers** in the developing world through the sale of seeds such as "Terminator" seed, a class of genetic engineering technologies that produce seeds with sterile offspring, which prevents farmers from planting seeds from their harvest and forces them to buy new seeds every year, thus increasing farmers' dependency on these products.

Business risks and opportunities

Some GMO supporters plead for market opportunities in the design and growing of GM crops as they emphasize the increasing global population, the growing demand for food products, the possible productivity gains, and the existence of some GMO-permissive national legislation (e.g. United States, Brazil).

However, these market opportunities are fragile and can turn into **market risks, when public opinion is so fierce that companies are forced to stop their R&D activities**, as illustrated by BASF recent decision to withdraw from the European market. Even in developing countries with more GMO-permissive legislations, such as India, market risks exist. In the state of Madhya Pradesh (India), Bayer CropScience has been sentenced to pay EUR 850,000 to 1,000 Indian farmers for selling seeds that did not match promised yields⁽²¹⁾. Nevertheless, developing countries remain a major market opportunity as 50% of global GM-crops were grown in these countries in 2011. **Other risks are reputational, fed by consumers' concerns about the lack of assessment and information on the mid- to long-term effects of GMOs**. In the United States, in March 2012, 55 senators and congressmen and consumers asked for increased transparency and labelling of GMOs⁽²²⁾.

Growing and using GM-crops require companies to adapt to food safety and labelling requirements which are different from one country to another and from one region to

another (Europe versus the USA for instance). Complying with these requirements is **time- and resources-consuming for companies and expose them to legal risks should evidence be found that they fail to meet these regulations**. For example, in 2009, Bayer CropScience AG was condemned by the Federal Court jury in St. Louis (USA) to pay USD 2 million for financial damage sustained by Missouri farmers when their rice crops were contaminated by GM seeds (LibertyLink rice)⁽²³⁾. Bayer is facing more than 1,200 similar cases in five US states. The GM Contamination Register⁽²⁴⁾, launched by Greenpeace and GeneWatch UK, gathers cases of GM contamination. 21 cases were reported in 2011 occurring in countries such as Luxemburg, Austria, the UK, Canada, Portugal, France, Greece, Hungary, Germany. In most cases, the national regulation authorities identified the cases and took action.



Vigeo's findings on transparency on GMOs

Vigeo has identified four sectors which are the intermediaries between the designers of GMOs and the distributors of finished products which may contain GMOs. These are the **Beverage, Food, Tobacco and Forest Products & Paper** sectors. Companies in these agricultural sectors can grow GM-crops (such as fruits, tobacco leaves, trees) or integrate GM-ingredients in finished products. If they do so, those companies have a **responsibility to monitor the presence of GMOs either in their operations or in their supply chain** in order to prevent the environmental risks on biodiversity, through measures such as buffer zones, isolation distances, or pollen traps. Adopting such practices and ensuring transparency towards stakeholders on them could prevent companies from facing reputational or legal risks.

Among the 34 companies under review in these four sectors, **9 companies (26.5%) explicitly state that they do not include GMOs in**

their final products⁽²⁵⁾. 8 other companies⁽²⁶⁾ (23.5%) actually disclose a commitment and/or measures to preventing GMO contamination. The remaining 17 companies (50%) are not reporting any policies or actions to address the issue⁽²⁷⁾.

Good practices were identified with companies reporting that they conduct regular audits to guarantee the absence of GMO cross contamination (Pernod Ricard), that they carry out scientific monitoring of the safety of authorised or sold GM products in countries with permissive legislation, assess how suppliers work to prevent GMO cross-contamination, and conduct audits of suppliers' operations (Danone).

Conclusion

All four sectors analysed by Vigeo appear to lack maturity on the issue of GMOs.

Firstly, stakeholders have a limited visibility on whether companies are using GMOs in their products and on their commitments to manage the associated environmental risks. Secondly, companies that grow GM-crops or use GM-ingredients do not provide relevant information on actions taken to handle risks linked to their use. And thirdly, a majority of the companies potentially using GMO do not display any commitment to prevent GMO cross-contamination.

Considering the public opinion on this topic and the stringent regulation in Europe, this is a potential source of reputational, market and legal risks for companies associated with GMOs in agriculture.

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Notes and Sources

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 European organisations: OECD Safety Considerations for Biotechnology; Directive 2001/18/EC on the deliberate release of GMOs into the environment; Regulation (EC) 1829/2003 on Genetically modified food and feed and Regulation (EC) 1830/2003 on traceability and labelling of GMOs;
 International organisations: Convention on Biological Diversity; Agenda 21 (Chap. 16 Environmentally Sound Management of Biotechnology); World Trade Organisation Agreement on the Application of Sanitary and Phytosanitary Measures; Cartagena Protocol on Biosafety; FAO International Treaty on Plant Genetic Resources;
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- 26) Beverage: Coca-Cola Hellenic Bottling Company, Pernod Ricard; Food: Associated Brit Foods, Danone, Nestlé, Tate & Lyle; Forest Product & Paper: Stora Enso, Upm Kymmene.
- 27) Beverage: Anheuser-Busch InBev, C&C Group, Diageo, SABMiller ; Food: Arysza, CSM, Kerry Group, Marine Harvest, Nutreco, Orkla, Premier Foods, Unilever; Forest Product and Paper: Holmen, Mondi, Norske Skogindustrier, Svenska Cellulosa; Tobacco: Swedish Match