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**GM-free private standards and their effects on biosafety decision-making in  
developing countries**

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*Contributed Paper prepared for presentation at the International Association of Agricultural  
Economists Conference, Beijing, China, August 16-22, 2009*

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# **GM-free private standards and their effects on biosafety decision-making in developing countries**

## **Abstract**

We provide a comprehensive review of international cases where GM-free private standards set up by food companies in developed countries have influenced biosafety policymaking in developing countries. We find twenty-nine cases where private importers have directly or indirectly affected policy decisions in twenty-one countries. Most of the cases relate irrational fear of export losses to excessively precautionary decisions. These cases are based on two generally misleading premises: the belief that Europe or Japan represents the only market for exports, and the perception that non-GM segregation is infeasible or prohibitively costly in all situations. Our study also demonstrates the importance of information asymmetries across countries and agents and the role of risk aversion in seemingly irrational decision making. The combination of these four factors helps us explain why presumed but unproven expected commercial losses still represents a significant impediment to biosafety policymaking in developing countries.

**Keywords:** Agricultural biotechnology, private standards, political economics.

## **1. Introduction**

Policy specialists have identified several factors playing a role in the reluctance of developing countries to adopt regulations of genetically modified (GM) crops. Among these, the fear of losing agricultural exports to Europe has been advanced as a significant reason (Paarlberg 2002). In particular, this fear has been manifested through decisions taken by African and Asian policy makers on the approval of GM crop for field trial, commercial release, or import authorization.

At the same time, despite contradicting claims by various opposition groups, applied research conducted in the area of GM products and international trade has consistently shown that alleged commercial risks on currently approved GM crops have been largely exaggerated. For instance, Paarlberg

(2006) showed that Eastern and Southern African countries have very low export volumes towards GM-averse markets of Europe. Several studies using international trade simulations have also demonstrated that developing countries have not much to lose and a lot to gain if they adopted productivity enhancing GM crops even with import barriers (Anderson and Jackson 2005).

This observed discrepancy between perceived and actual commercial risks, while puzzling, and of considerable importance, has largely been left out of the GM food and trade debate. Assuming policy makers are at least partially rational when assessing commercial interests, it suggests a distortion between perceived and real commercial risks, supporting a bias towards a precautionary stand, putting any possible export consideration before domestic interests. Investigating this issue requires diving into the political economy of national biosafety decision making and the governance of modern international food supply chains.

A closer look at the evolving global food governance points towards the determinant role of private standards. In recent years, modern value chains for exported commodities have been dominated by the specific requirements of retailers in developed countries. In particular, many food companies in Europe, Japan, and a few other developed countries, have been requesting their providers to avoid GM ingredients in order to respond to consumer demand. While these “GM-free” standards are not specifically different from others, enforcing them in exporting developing countries that are considering the introduction of GM crops was bound to create conflicts of interest between regulators or developers and traders.

This paper analyzes observed interactions between importing food companies and their GM-free private standards and biotechnology decision making in developing countries. Our review of evidence is based on field visits in South Africa, Namibia, and Kenya in 2007, and on the collection of secondary information on these and other countries. Our goal is to identify the critical factors explaining the observed disconnect between perceived and real commercial risk in biosafety decision making, in order to provide suggestions to policy makers facing allegations of commercial risks.

Although the private standard literature analyze a large range of standards and study their effects on the industry, consumers, and farmers, we did not find any specific article on the effects they may have on domestic public policies. Furthermore, no published study has focused specifically on the political implications GM-free standards may have on developing countries.

## **2. From GM-free private standards to decision making: a conceptual framework**

In the mid-1990s, with the growing development of GM crops and the increasing wariness among European consumers towards these technologies, GM-free private standards made their apparition. They were first introduced in 1996 in Europe with media and activist campaign against the import of GM soybeans (Livermore 2007). The Iceland supermarket chain in the United Kingdom was one of the first to take this decision, but many other chains followed. Soon, this phenomenon caught on and became a norm for supermarkets in Europe on most food products, including those sourced from developing countries.

The marketing decision of avoiding GM ingredients in food items rapidly became a quality attribute employed in the competition among retails chains of Europe, Japan and South Korea. A report by Greenpeace provides evidence of the widespread adoption of such practices in Europe (Greenpeace 2005): 27 of the top 30 retailers have a non-GM policy in Europe; 22 out of the top 30 European food and drink producers have a non-GM commitment in Europe. Some companies have even gone beyond processed products to include requirement on GM animal feed despite the lack of safety or labeling requirements on animal products.

Figure 1 presents a conceptual framework of possible links between trade-related interests and biosafety policy making, based on a two-country example. At the top of the figure, the importing country is a developed country with some specific import and marketing regulations on GM food. In the lower part of the figure, the second country is a developing country that exports certain agricultural products to one or more companies in the importing country, and who is facing policy decisions on biosafety or the use of GM crops.

In the importing country, a large share of consumers tends to be averse to the use of GM food. Confronted with this situation and facing the requirement to label their product as GM in the presence of any targeted ingredient by opponent groups that could affect their brand image, food companies decide to take a stand and avoid any GM ingredient in their product formulation.

In the exporting country, this GM-free private standard or clause is transmitted to the local traders, and down to the producers. The supermarket company may also have a retail partner in the country subject to the same standard. Two other groups are bound to be participating in the debate: the anti-GM non-governmental organisations (NGOs) and associations of organic or fair trade exporters, whose regulating principles forbid the use of GM crops, seeds, or elements thereof.

At the same time, after the introduction of the private standards, we assume that the government of the exporting country is considering a biosafety decision. It may be discussing the adoption of a biosafety bill or be about to take a discrete regulatory decision on the approval or rejection of an application for confined field trial, for import of a GM seed, of a shipment that may contain GM food or feed, or of food aid that may contain GM grains.

Figure 1. A Framework of hypothetical links between actors

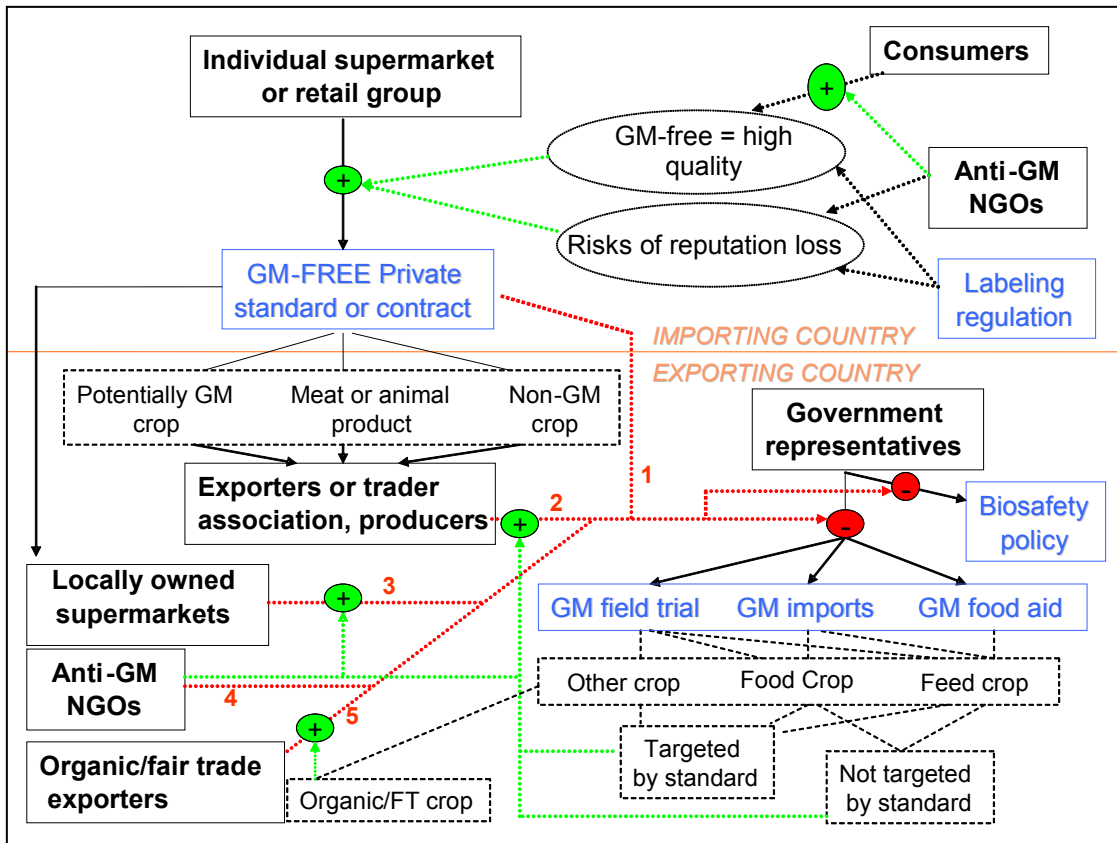


Figure 1 identifies five possible influential links (numbered 1 to 5) between the different players and policy decisions that we wish to evaluate in our review of evidence.

### **3. From Importers to Biosafety Decision-making: Reviewing the Evidence**

Our global review is based on a synthesis of various sources of data, including global internet research, phone or email requests to researchers and experts internationally, and onsite interviews with various concerned stakeholders in South Africa, Namibia and Kenya in the summer of 2007.

We found at least twenty-nine cases of reported interaction between private commercial interests and biosafety policy decisions in twenty-one countries. However, the actors involved, the scope of the interaction, its policy implication, and/or the possible causality largely vary from case to case. In what follows, we summarize the cases in each region in three tables.

Table 1 describes the cases we found in Africa. The table also divides cases into three categories: the dark shaded rows regroup cases where the risks are largely unfounded; the light shaded rows gather cases where the export risks and policy decisions are debatable; and the remaining rows show cases either based on real commercial risks or without political implications.

Many of the African cases stand in the first category. For instance, the rejection of Egypt of a GM potato variety that was explicitly not used for exports on the basis of the fear of export loss to Greece is quite dubious. The rejection of food aid with GM maize in Zambia, which was attributed by a number of different sources to the lobbying effort of organic trading companies exporting vegetables to Europe also seems largely unjustified. Other cases seem to make sense from a commercial standpoint.



Table 1. Cases in Africa- the most shaded cells represent the most unjustified risks.

| Country             | Product(s) targeted                | Alleged commercial risk   | Visible link with private standards/ interests   | Policy result                               |
|---------------------|------------------------------------|---|--|---|
| <b>Egypt</b>        | GM potato                          | Fear of export loss of potato to Greece and other EU countries (USDA 2006, Serageldin and Juma 2007), despite the use of a different potato variety   | McDonald's decision to ban GM potato influential, possible role of EU traders.                         | Decline application for commercial release  |
| <b>Kenya</b>        | GM maize and cotton                | Fear of export losses with field trials (Masava 2005) or with adoption of the biosafety bill (Amungo 2007)  | Vocal fear mongering by organic farming organizations  | Slow biosafety bill approval                |
|                     | Tea                                | EU exports  | GM-free certificate requested despite the inexistence of GM tea  | N/a   |
| <b>Malawi</b>       | Food aid                           | EU conditionality of not purchasing GM grain with assistance money  | n/a  | Possible influence on slowing field trials  |
|                     | GM maize/cotton                    | Fear of export loss of groundnuts to Europe with transgenic crop introduction   | Possibly via traders (unconfirmed)   |   |
| <b>Namibia</b>      | GM maize imports from South Africa | Concern of losing EU beef market with GM entering feed for cattle (Africa News 2005) despite possible segregation and opposition from animal feeding sector (Namibia Resource Consultants 2005) | Decision pushed by the Namibian Meat Board related to several supermarket chains in Europe             | Strict ban of GM maize imports (Graig 2001) |
| <b>South Africa</b> | GM maize, GM fed meat.             | Losing exports to EU; Losing national market with GM maize (Benton 2008)  | Not visible  | N/a   |
|                     | GM potato                          | Fear of losing national and regional market, despite different varieties  | Industry that exports in region  | GM potato potentially failing approval      |
|                     | GM wine yeast                      | Fear of losing all wine markets   | Wine industry  | Wine yeast was rejected                     |
| <b>Tanzania</b>     | GM tobacco                         | Reported fear of tobacco export losses to stop GM field trials  | Not visible  | GM tobacco company left before any decision |
| <b>Uganda</b>       | Bt Cotton                          | Fear of losing organic market in Europe with GM cotton field trial  | Organic traders-Cotton Development Organization/ Uganda Cotton Growers Association                     | Field trial deterred                        |
| <b>Zambia</b>       | Food aid                           | Fear of losing exports of green beans, organic baby corn and honey (Cauvin 2002, Bergstrom 2007, Paarlberg 2008) expressed by trader groups   | British supermarket influencing traders (Paarlberg 2008:135, Government of Zambia 2002, Robinson 2003) | Ban of GM food aid and GM imports           |
| <b>Zimbabwe</b>     | Food aid                           | Fear of losing exports of vegetables to EU (2002)   | Not visible  | Request milled food aid, ban imports        |

Source: Authors compiled from various sources.

Table 2. Cases in Asia- the most shaded cells represent the most unjustified risks.

| Country    | Product(s) targeted | Alleged commercial risk  | Visible link with private standards/interests   | Policy result  |
|------------|---------------------|--|---|--|
| India      | GM rice             | Fear of losing basmati exports to Europe if GM rice is planted (Bangkok Post 2006a, The Hindu 2006, Sharma 2006). Claim that segregation is infeasible (Economic Times 2005)                         | Exporters and organic groups lobby government against GM rice (Kumar 2006)  | Contribute to rejection of new field trials                      |
| Indonesia  | GM cocoa            | Fear of losing exports to the United States  | After a lab test by a research institute, a US food company complains to government   | Research institute asked to develop non-GM certificate for cocoa |
| Qatar, UAE | GM food             | Alleged risk of GM rice imports from India spread by anti-GM groups (Landais 2007) in support of GM food labeling.   | Companies encouraged to become GM –free after testing or labeling by anti-GM groups   | Governments considering mandatory labeling of GM food            |
| Thailand   | GM papaya           | Fear of losing exports of papaya and other products (sweet corn, baby corn, tomato etc) to Europe after an escape of GM papaya from confined field trial in 2004 (Bangkok Post 2006b, Davidson 2008) | Tesco, Carrefour and German supermarket ask for Thailand reject any shipment (Samabuddhi 2004, Sukin and Sirisunthorn 2004)   | Thai government forbids any GM field trial(Eyre 2007)            |
|            | GM rice             | Fear of export losses to Europe  | Thai exporters declare themselves GM free and decide to ban any GM rice in Thailand   | Thai government adopts GM-free clause (Thai News Agency 2008)    |
| Vietnam    | GM rice             | Fear of export losses to Europe.   | Vietnam Food Association follows Thai rice association in banning the use of GM rice. A French supermarket sent a letter stating that GM rice commercialization would result in loss of exports | Vietnamese decision to stay out of GM rice.                      |

Source: Authors compiled from various sources.

Similarly, tables 2 and 3 show the case in Asia and elsewhere. Interestingly we found fewer cases with unjustified export risks in these countries. More cases in these areas lie in the intermediate category, presenting likely but potentially manageable risks. For instance, the escape of GM papayas from field trials, if not controlled in 2004, would have resulted in export losses of papaya products from Thailand, but not of other products as claimed by certain groups. The policy response (a moratorium of GM field

trials) was also probably excessive given the interest and investment of Thailand in biotechnology and the likely benefits of GM papayas for domestic growers.

Table 3. Cases in other countries- the most shaded cells represent the most unjustified risks.

| Country              | Product(s) targeted     | Alleged commercial risk  | Visible link with private standards/interests  | Policy result   |
|----------------------|-------------------------|--|--|---|
| <b>Australia</b>     | GM canola               | Fear of export losses in Japan despite contradicting evidence (Lewis 2007, Reuters 2008).                | Supermarkets take stand against GM food (Linden 2008, ABC 2007). Biological farmer association involved in spreading fears (Farmonline 2007). 155 Japanese civil organizations present petition to maintain a moratorium | Some States reject the use of GM canola                           |
| <b>Brazil</b>        | GM soybeans             | Export losses in Europe  | The British Retail Consortium called the Brazilian soy producers to plant less GM soy  | Might affect approval of new GM soybeans                          |
| <b>Canada</b>        | GM potato               | Rejection of GM potato for fear of market losses   | McCain company among others  | Possible influence on other countries with GM potato applications |
|                      | GM wheat                | Export losses to EU / Japan  | Rejection of GM wheat was triggered by producer associations fearing export losses   | Encouraging the Canadian Wheat Board to drop GM wheat             |
| <b>New Zealand</b>   | GM wine processing aids | Avoid losing image and exports   | Traders' decision based on international standard  | Not applicable  |
| <b>Russia</b>        | GM food                 | Fear of losing market access to the EU, even without clear opposition of the public                      | Not visible but possible   | Ban of GM food. City of Moscow's GM free policy (Kilner 2007).    |
| <b>United States</b> | GM potato               | Same as in Canada  | McDonalds' decision.   | Other countries decision to reject GM potato                      |
|                      | GM wheat                | Same as in Canada  | See Canada   | See Canada  |
|                      | GM rice                 | Risk of losing rice exports to Japan (Pollack 2008) despite potential benefits (Bond et al. 2003)        | Traders involved   | Rice approved but rejected by States                              |
|                      | GM sugarbeet            | Initially rejected by food companies (Mars, Hershey's) for fear of market losses domestically and abroad | Traders possibly involved  | Potential influence elsewhere                                     |

Source: Authors compiled from various sources.

#### 4. Disentangling irrational fears from real commercial risks

In our global review, we find a number of common features across cases. First they directly or indirectly link the possibility of commercial risk to private based efforts in influencing policy decisions. In particular, we find that the five types of actors identified in Figure 1 have had a partial influence on decision making in at least one case. However, importing companies do not appear to interact directly with policy makers. Instead, in most cases, they do it via the prominent roles of local trader groups. Organic groups and anti-GM NGOs have had similar roles, and share views and sometimes campaigns in opposing GM.

Secondly, we find that unjustified or seemingly irrational decisions to avoid GM are generally based on two misleading presumptions. The first is that *segregation between GM and non-GM is infeasible*. Assuming that segregation is absolutely infeasible prompts the fear that there will be no more conventional products, should a GM variety get approved. However, segregation of non-GM of products can be a distinct possibility, as demonstrated in Brazil, South Africa, Spain, Canada and the United States or for organic products worldwide. The second assumption is that *current markets in Europe or Japan are the only markets for exports*. Under this rationale, because these markets are largely opposed to GM, there is very limited scope for trade if GM products are grown in a country. On the contrary, there are a number of countries which do not discriminate between GM and non-GM products, or that do not have as high marketing standards as Europe.

Third, we find that two additional factors play a significant role in irrational cases: information asymmetries and risk aversion. Information symmetries related to a differential knowledge in GM marketing regulations and management strategies, and basic export considerations occur between the importer and local actors and between the policy makers and local or outside actors. Such asymmetries can result in confusions, misunderstandings, and bad decisions. We also found evidence that traders in developing countries may be risk averse in their relationship with buyers, unquestioningly complying with standards required by the buyers, despite the costs these standards may imply. The perceived or

actual market power of buyers accentuates this phenomenon: losing a buyer appears as a risky gamble. Risk aversion behaviors can also be found among policy makers that do not want to lose popularity.

## 5. Conclusion

In this paper, we investigate the observed discrepancy between real and perceived commercial risks with the use of GM products by diving into the political economy of GM food and international trade. Overall, we found twenty-nine cases where GM-free private standards reportedly have interacted with biosafety policy decisions in twenty-one countries. In spite of the difficulties of gathering evidence on this sensitive topic, our review of evidence help us obtain a consistent framework of observed influential links among major actors at the confluence of policy makers and the global food chain.

Although GM-free private standards or policies are set up by importing food companies, there is insufficient evidence to support their *direct* involvement in policy processes in developing countries. However, these actors are *indirectly* influential in policy making via their local traders who face the possibility of exclusion if they do not comply with their standards. Apart from the traders and associated producer groups in the exporting countries, organic producers and anti-GM nongovernmental organization vocally use the fear of export losses to support their case.

The prominence of private standards in food trade and their capacity to dictate what products can access developed countries are neither new nor specific to GM products. Neither is the observed political power of exporting producers in exerting influence over domestic policy decisions to satisfy their economic self-interest. But it is the combination of the two phenomena in the complex, often poorly informed, and highly politicized debate around the use of GM products that makes this situation the source of unexpected and often seemingly irrational decisions. Rejecting a discrete decision on a trial of an agricultural technology can be detrimental to a country in the long run, especially if this technology addresses critical agronomic constraints and proves to be successful in other countries. Rejecting food aid that may contain GM elements for fear of export losses of an unrelated product is an even more worrisome decision that can directly affect the lives of population at risk.

While commercial risks are legitimate concerns for countries largely depending on agriculture, they still differ considerably from health and environmental risks associated with the use of GM products and should therefore be managed in a different way. In particular, commercial risks do not have the same direct consequences; they are not as uncertain and they are not irreversible. With this in mind, a strict “precautionary approach” to managing commercial risk is irrelevant and can prove detrimental. Managing commercial risks can be done carefully, by gathering information and accounting for market uncertainties, without prescribing a simple blanket ban on any decision that could *hypothetically* have long term effect on *possible* future trade. Large uncertainties on the commercial consequences of a specific decision can most often be addressed by gathering more and better market information.

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