

## **AGRICULTURAL BIOTECHNOLOGY, TRADE, AND THE DEVELOPING COUNTRIES**

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Developing countries and their low-income people could benefit significantly from the development and use of modern biotechnology in agriculture within a proper biosafety regime. However, international agreements on biosafety, biodiversity, and trade, over which poor countries and poor people have little influence, could reduce or enhance such benefits. Every effort should be made to assure that the voice of the poor and food insecure is heard at relevant international fora.

*Key words:* modern biotechnology; trade; agricultural biotechnology; developing countries; food security.

**F**uture international agricultural trade flows will be influenced by two sets of biotechnology-related factors. First, current and new government regulations, and bilateral and multilateral trade agreements; and, second, the behavior of private actors: private traders, farmers, and consumer demands and preferences.

Government policy and regulations regarding modern agricultural biotechnology are in a flux in many, if not most, countries. Rapid technological developments have resulted from molecular biology-based research. These rapid developments, coupled with changing consumer demands and preferences caused by a fear of genetically modified (GM) food, are pushing governments to rethink existing regulations and policies. Consumer fears have been caused by strong advocacy groups. While national policies and regulations will be influenced by international agreements, strong disagreements between the European Union (EU) and the United States and Canada as to how to proceed are likely to make negotiations on the subject very difficult. One of the key issues is whether GM food should be subjected to mandatory government-enforced labeling or whether such labeling should be voluntary and left to the private sector. In addition to the European Union, several other major food traders such as Australia and Japan are either considering such mandatory labeling, or they have already introduced it. One of the underlying differences among countries is whether mandatory labeling should be enforced only to indicate substantially different content of the food, this is currently the case in the United States, or whether GM food should be labeled simply because it contains, or may have been developed by means of, GM organisms. The draft Cartagena Protocol on

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Biosafety agreed to at the January 2000 Meeting in Montreal postponed a decision on labeling by stating that exporters may merely state that a shipment may contain living modified organisms.

Another underlying issue refers to the use of the precautionary principle to determine whether, or when, a GM food can be commercialized. The implementation of the precautionary principle is very difficult because of a lack of a clear definition of an acceptable level of risk.

In the past, the sanitary and phytosanitary measures have not caused a great deal of excitement in international trade negotiations. This is likely to change because some countries want to invoke such measures to regulate trade in GM foods. Similarly, the technical barriers to trade are likely to be discussed. The *Codex Alimentarius* which sets standards for internationally traded foods has become a very sensitive topic with heated discussions particularly as related to standards for GM foods and related matters such as hormones in beef.

A potential conflict between the WTO and the Convention on Biodiversity with respect to the regulation of the international movement of germplasm and GM foods is likely. Related to this topic is the question of regulation of the so-called "terminator" gene which, while not likely to be commercialized for another four to five years, if ever, has already caused a great deal of emotion, particularly among developing countries and advocacy groups. Some countries, including India, declared that they will not permit import of "terminator" seed, and one of the questions that needs to be resolved internationally is whether such unilateral trade restrictions are in conflict with membership of the WTO. As the technology progresses, it is likely that the approach to render second generation seeds infertile will be replaced by an approach to turn on and off improved traits in seeds. This will enable farmers to reuse their seeds with or without the improved traits. This, of course, would be a tremendous improvement over a situation where the seeds may be infertile. Monsanto recently declared that the terminator technology would not be promoted.

### **The Role Of The Private Sector**

One of the questions that needs to be addressed by governments is whether they, in fact, need to intervene with compulsory labeling and differentiation, or whether demand-led product differentiation undertaken by the private sector would be sufficient to give consumers and farmers the choice they deserve. During the last year or so, private grain traders have already initiated such product differentiation to meet consumer demands. Thus, American wholesalers and exporters are beginning to differentiate GM soybeans from non-GM soybeans and, in some cases, are paying a higher price for the non-GM soybeans for the European market. Others are focusing on a differentiation between the GM grains that have been approved by the EU and those that have not. Similarly, European supermarkets, wholesalers, and importers are looking to exporters who can guarantee a separation between GM grain and non-GM grain or GM grain approved by the EU. Since Brazil officially does not yet produce GM soybeans, European importers are particularly interested in exploring opportunities for purchase in that country. To the extent that private corporations will undertake the differentiation and labeling required by consumers, the WTO agreement would not be violated and a trade conflict between the United States and the European Union on this matter could be avoided.

### **Impact On Developing Countries**

So what does all this mean for developing countries? Developing countries would be affected differently depending on whether they are exporters (such as Argentina, Brazil, and Thailand), importers, such as most low-income developing countries, or both. Since Argentina has introduced GM seed in a large share of its soybean production, it will be facing some of the same problems

currently being faced by the United States. Brazil, on the other hand, has not yet officially introduced GM soybeans in its production system, and although allegedly GM seeds have found their way across the border from Argentina, Brazil is still in a position to claim that its soybean export is largely free of genetic modification. This would strengthen its position in the European market.

According to Reuters (1999), the EU has warned Thai rice exporters that the EU may reject Thai rice if any GM organisms are found in it. This is an illustration of what may become the rule for any developing country wishing to export food to the EU. Using the precautionary approach, the EU, or any other importing country, may discriminate against any potential exporters of GM food or feed without having any scientific evidence of harm. This principle was agreed upon at the Montreal meeting on biosafety held in late January 2000. However, such behavior might violate the WTO agreement.

Low-income developing countries that wish to use an agricultural export-led growth strategy will be faced with the choice between adopting modern biotechnology in agriculture or maintaining the possibility of a GM-free food export to the European Union. Of course, developing countries could choose to differentiate and label GM foods and non-GM foods and, to the extent that they can manage such a differentiated system, they would be able to capture the benefits from modern biotechnology and agriculture for domestic consumption while maintaining an export market for GM-free foods. Developing countries may also decide to label GM foods and GM-free foods in the domestic market to provide the choice to domestic consumers. In view of the tremendous importance of productivity increases in agriculture in low-income developing countries for both the rural and the urban poor, it is hard to believe that any low-income developing country would refrain from utilizing appropriate modern biotechnology in agriculture within reasonable biosafety limits.

A large share of the food imported by developing countries originates in the United States, and these importing countries must take a position on not only biosafety and food safety but also whether they wish to insist on product differentiation and labeling in the case of imported food. Again, differentiation and labeling could be demand-led and undertaken voluntarily by the private sector. It is unlikely that state-enforced mandatory differentiation and labeling, and related trade restrictions, would be compatible with the WTO membership, except when labeling is justified on food safety grounds.

Because of its size and progress in the area of modern biotechnology for agriculture, China will be an important player in the international trade negotiations related to GM foods. This would be the case irrespective of whether China becomes a member of the WTO or not. As a member, China would obviously exercise its rights and interests in the international negotiations, while as a non-member China could proceed with a set of trade regulations that would be incompatible with WTO but which could significantly influence international trade flows.

## **References**

Petsiri, E. (1999, October 12). EU warns Thailand over gene-altered rice exports. Reuters Business Briefings: Reuters Limited.