ISAAA
INTERNATIONAL SERVICE FOR THE ACQUISITION OF AGRI-BIOTECH APPLICATIONS

PROGRAM FOR BIOSAFETY SYSTEMS

GMOs and Exports: Demystifying Concerns in Africa

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About ISAAA

The International Service for the Acquisition of Agri-biotech Applications (ISAAA) is a non-profit making international network founded in 1990 to facilitate the acquisition and transfer of agricultural biotechnology applications for the benefit of resource-poor farmers in the developing world.
ISAAA has three network centres namely, AfriCenter in Nairobi, Kenya:the SEAsia Center in Los Banos, Philipines and AmeriCenter in Cornell University, Ithaca, New York.

About PBS

The Program for Biosafety Systems (PBS), is a program managed by the International Food Policy Research Institute (www.ifpri.org), supports partner countries in Africa and Asia in the responsible development and safe use of agricultural biotechnology. PBS effectively addresses biosafety through an integrated program of research, capacity development, and outreach. PBS is funded by the U.S Agency for International Development (USAID).

Acknowledgement

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Introduction

Current trends and future projections indicate that Genetically Modified Organisms (GMOs) or biotech crops are increasingly becoming dominant in the global economy and world trade. In 2007, the global market value of GM crops was US$6.9 billion representing 16% of the US$42.2 billion global crop protection market in 2007, and 20% of the ~US$34 billion global commercial seed market. Substantial net economic benefits at the farm level amounting to nearly $ 7 billion in 2006 and $ 33.8 billion for the period 1996-2006 have been reported (Brookes, G and Barfoot, P 2008).

The rapid diffusion of GMOs in agricultural and food production systems has triggered a wide-range of concerns and fears. While credible evidence shows that farmers are deriving benefits from GM crops in both developing and developed nations, some countries have been reluctant to embrace the technology because of a variety of reasons ranging from safety of GM foods, environmental related impacts (e.g. gene flow and effects on non-target organisms), ethical and socio-economic issues and the proprietary nature of the GM technology. The aforementioned concerns impact on international trade both directly and indirectly. The possibility of losing market access for agricultural exports has been a critical concern for African countries.

This brief aims at expanding and promoting informed perspectives of the magnitude of trade related risks associated with adoption of GMOs in Africa. The brief also highlights the changing scenarios and evolving developments with regard to acceptance of GM crops and products.

GM crops commercialized globally

The dominant GM crops that have been granted approvals for commercial planting globally include soybean, maize, cotton and canola. GM rice, squash and papaya have also been approved but are currently being grown under relatively small areas. The extent to which GM crops can affect trade is examined within the context of the aforementioned crops. It is noted that the most important factor to consider is what a country exports and the import policies on GMOs in the destination markets. In 2006, a total of 51 countries both developing and developed had either approved GM crops for commercial planting or placement on the market for food, feed or processing. They include Japan, Canada, South Korea, Australia, the Philippines, Mexico, New Zealand, the EU and China. GM crops have made important contributions to increasing yields of many farmers, raising global production and trading volumes of key crops. In Africa, South Africa is the only country that features on the global map with respect to commercial adoption of GM crops. In 2007, South Africa was ranked number eight overall with a total area of 1.8 million hectares under GM crops (mainly Bt maize, Bt cotton and GM soybean). Farm income gains from GM crops between 1998-2006 in the country amounted to US$ 150 million (James, 2007). South Africa will be joined by Burkina Faso and Egypt after biosafety regulatory authorities in the two countries recently approved commercial planting of genetically modified varieties of cotton and maize respectively.

Potential impacts of GMOs on exports

African countries have been preoccupied with the notion that adoption of GMOs would translate to a rejection of agricultural exports by all the importing destinations including relatively sensitive destinations such as the EU. Consequently, some countries have taken precautionary stances with the conviction that they are preserving their trade interests and niche markets. However, such decisions or stances are hypothetical and in most cases are based on perceptions and interest groups other than economics. The GM-free stance and policies in such countries may deny farmers the opportunity to harness and maximize potential benefits of the technology such as increased productivity, enhanced environmental sustainability and reduced expenditure on agro-chemicals and other crop protection costs. A study commissioned by the Common Market for Eastern and Southern Africa (COMESA) analyzed the value and volume of agricultural food and feed exports by African countries to various regions of the world including the EU. The findings revealed that the share of total export value that might be rejected translates to 1.1 percent for Kenya, 6.5 percent for Uganda and 6.2 percent for Tanzania.

In a more realistic and probable scenario assuming that only Europe would reject exports of commodities that may contain GMOs, the decline in exports from the three countries would be less than 1 percent. A decline caused by the introduction of GMOs may apply in some cases but the magnitude of the losses incurred would be negligible (Paarlberg et al., 2006). This low level of trading risk exposure stems from the fact that most of the agricultural exports that importers may reject as possible GMOs have not been commercialized as yet.

Most African countries including Kenya have traditionally exported commodities such as tea, coffee, cocoa, pyrethrum, sugar tobacco, bananas and a wide range of horticultural products. GM varieties of these commodities have not been developed and commercialized anywhere and commercial interest to develop them has not been demonstrated. In this respect, adoption of Bt cotton, Bt maize or GM cassava would not affect any of the above crops or jeopardize exports. Hence it can be deduced that African countries will continue growing and exporting these traditional commodities to the current markets in the foreseeable future without fears of any drastic reduction in foreign exchange earnings.

The findings of the COMESA study are supported by experiences from South Africa, the only country in the continent that has been growing GMOs since 1997. The area under GM crops (maize, and cotton) and the number of farmers planting biotech crops has been increasing significantly. The country has been able to maintain its exports through segregation arrangements for specific products and markets. For instance, non-GM maize from GM maize. Europe still remains South Africa's primary trading partner accounting for almost half of the country's agricultural exports (OECD, 2006), and the value and volume of non-GM commodities (for instance horticultural commodities) has not declined over the years. A decline in trade would have been a major disincentive to adoption of GM crops in the country.

Related studies contend that if countries in Sub-Saharan Africa impose bans on adoption of GM crops in an attempt to maintain access to EU markets for non-GM products, the loss to farmers and consumers in the region would significantly outweigh the negligible gains tied to greater market access to the EU (Anderson and Jackson, 2005).

The scenario in the European Union (EU)

A few years ago, the EU was regarded as a destination that treats GMOs with a lot of sensitivity and skepticism (ICTSD and ATPS 2007). However, the changing and dynamic landscape reveal that several approvals for introduction of GMOs have been granted after studies commissioned by the EU Directorate of Research demonstrated that GMOs currently available in the market pose no adverse risks to human health or the environment.

In 2004, the EU lifted a six-year moratorium on GMOs and three years later (in 2006), eight European countries were on record as having approved GM crops for commercial planting. They include Spain, France, Czech Republic, Portugal, Germany, Slovakia, Romania and Poland (James, 2007). The EU has a clear and transparent framework (Directive 2001/18/EC) which involves independent scientific risk assessments before GM products are placed on the market.
The EU Food Safety Authority (EFSA) provides the scientific advice that underpins EU decisions on GMOs, but it is the EU member states and the European Commission who decide on market approvals for the same. Since 1994, more than 30 GMOs or derived food and feed products have been approved for marketing based on rigorous risk assessment conducted by EFSA (EU, 2006). They include soya, maize and oilseed rape varieties. The EU is one of the leading importers of these commodities and the probability that they are GM is high because they originate from countries such US, Brazil and Argentina which produce and export GMOs without the policy of segregation (Bridges, 2007).

Conclusion

The realities of agriculture in Africa make the case for urgent use of GM crops. However, the region is seriously lagging behind in the adoption and use of the technology while other regions of the world are reaping enormous benefits from it. African countries have been hesitant to support the development or use of GM crops or their products on the basis of false perception of laws and regulations in the export markets. Most often decision-making is not informed by clear economic evaluation of the costs and benefits of adopting vs. rejecting GM technology or its products. Stakeholder concerns and fears regarding rejection of exports are driven by low levels of information regarding what constitutes GM sensitive products, the value and volume of exports and import policies in the destination markets. Information in this area is scanty and not well documented.

Countries should carefully weigh the risks of losing export earnings in Europe on a case-by-case basis. Reluctance to approve GM crops particularly those ones proven to deliver high welfare gains is likely to deny farmers in the region the opportunity to harness the diverse benefits of GM crops and products.

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