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Agricultural Biotechnology Annual

Biotechnology - GE Plants and Animals

Approved By:
Laura Geller, Senior Agricultural Attaché

Prepared By:
Almeida Zacarias, Agricultural Specialist

Report Highlights:
Mozambique has planted the first field trial of Genetically Engineered (GE) corn in the Chókwè District of Gaza Province in the southern part of the country on February 18, 2017 as part of the Water Efficient Maize for Africa (WEMA) program. Post expects that trials will continue and results will be shared in 2018. These are the first trials after the publication of the Mozambique Regulation on Biosafety related to the management of "Genetically Modified Organisms" (Decree no. 6/2007, of April 25, 2007) updated in late 2014.

SECTION I: EXECUTIVE SUMMARY

Mozambique's rural economy is characterized mainly by farming; about 80 percent of its estimated 25 million people are active in farming. Of the 80% in agriculture, only 10 percent are involved in commercial farming and the remaining are subsistence farmers. Over 80 percent of the total cultivated area is used for the production of staple food crops for self-consumption, including cassava, corn, rice, sorghum and pulses.

According to the Department of Commerce, Mozambique is currently the United States' 122nd largest trading partner with $361 million in total (two-way) trade during 2015. U.S. exports to Mozambique in 2015 were $265 million, down 29% ($111 million) from 2014 but up 321% from 2005. The top export categories (2-digit HS) in 2015 included railway vehicles/equipment ($101 million), mineral fuels ($40 million), machinery ($32 million), vehicles ($28 million), and electrical machinery ($17 million). U.S. exports of agricultural products to Mozambique totaled $10 million in 2015.

U.S. imports from Mozambique totaled $96 million in 2015, down 3.9% ($4 million) from 2014, but up 706% from 2005. The top import categories (2-digit HS) in 2015 included: ores, slag, and ash (titanium ores) ($41 million), precious metal and stone (rubies) ($22 million), edible fruit & nuts (cashews) ($17 million), sugar ($8 million), and special other (returns) ($5 million). U.S. imports of agricultural products from Mozambique totaled $26 million in 2015.

Mozambique's Regulation on Biosafety related to the management of "Genetically Modified Organisms" (Decree no. 6/2007, of April 25, 2007) was updated in late 2014. The country has not yet started production and commercialization of GE products. However, approved trials of GE drought and insect resistant corn began in the 2016/17 planting season with results expected in 2018.

SECTION II: PLANT AND ANIMAL BIOTECHNOLOGY

CHAPTER 1: PLANT BIOTECHNOLOGY

PART A: PRODUCTION AND TRADE

(a) PRODUCT DEVELOPMENT

Mozambique's rural economy is characterized mainly by farming; about 80 percent of its estimated 25 million people are active in farming. Of the 80% in agriculture, only 10 percent are involved in commercial farming and the remaining are subsistence farmers. Over 80 percent of the total cultivated area is used for production of staple food crops for self-consumption, including cassava, corn, rice, sorghum and pulses.

GE corn seeds were planted in a Confined Field Trial (CFT) by the Mozambican Agricultural Research Institute (Instituto de Investigação Agrária de Moçambique, IIAM) as part of the Water Efficient Maize for Africa (WEMA) program. It is expected that the trial will test the tolerance of GE corn to drought and insect pests. This will be added value for Mozambique farmers who are greatly in need of new

technologies for production.

(b) COMMERCIAL PRODUCTION

No commercial production of GE crops is currently taking place in Mozambique. Nevertheless, the country has appropriate legislation in place. The revised Biosafety Legislation also clarifies the process of import, export and transit of GE products which includes specific requirements for testing samples, grain import for human consumption, and quarantine measures.

(c) EXPORTS

Mozambique is not exporting any GE crops. However, exports are regulated by the Biosafety Legislation regulation. The regulation establishes production sites, transport, identification and labelling.

(d) IMPORTS

Mozambique does allow for the import of GE crops intended for direct use as food, feed or for processing but requires pre-authorization from the National Biosafety Authority.

(e) FOOD AID RECIPIENT COUNTRY

The import of GE products for food aid is generally authorized in emergency situations, but only for commodities destined for human consumption and only if there are no alternative sources to respond to emergencies on a timely manner. Any GE food grains imported need to be processed prior to distribution to the final recipients of food aid to avoid utilization as seed. Mozambique is a U.S food aid recipient country. Under Food for Progress and McGovern Dole Food for Education programs, the country receives from the United States corn soy blend (CSB) for school feeding projects, soybean cooking oil, and wheat for monetization under Food for Progress.

(f) TRADE BARRIERS

Post has not identified any additional biotechnology-related trade barriers that may negatively affect U.S. exports, nor potential to do so. Therefore, there are no biotechnology related trade barriers that negatively affect United States exports to Mozambique.

PART B: POLICY

(a) REGULATORY FRAMEWORK

The government of Mozambique acknowledges the contribution that modern biotechnology can make to meet critical needs for food and nutritional security. At the same time, the government also recognizes that the development of modern biotechnology needs to go hand-in-hand with appropriate regulations in order to maximize the benefits while minimizing potential risks.

It is within this context that the Parliament of Mozambique ratified the Cartagena Protocol on Biosafety

in 2001(Resolution no. 11/2001, of December 20th) and created the inter-institutional National Biosafety Working Group (GIIBS - Grupo Inter-Institucional Sobre Bio-Segurança) to coordinate the process of developing a National Biosafety Framework for Mozambique. The Ministry of Science and Technology was designated to serve as the National Biosafety Authority. This process culminated in development of the Draft National Biosafety Framework (NBF) published in 2005. The draft NBF was further refined through a public consultation process that led to the development of a consolidated document which served as basis for the Decree no. 6/2007, of April 25 2007, containing the Regulations on Biosafety.

The objective of the regulation was to establish domestic legislation aimed at regulating GE activities in Mozambique to ensure adequate protection of the environment, biological diversity, and human health. The approval of Decree no. 6/2007 by the Council of Ministers constituted an important landmark towards establishment of enabling environment for safe and responsible application of modern biotechnology in Mozambique.

Currently, GIIBS is tasked to co-ordinate biosafety activities in Mozambique. The Ministry of Science and Technology is the national competent authority and chair of GIIBS. GIIBS consists of representatives from seven ministries, including:

- Ministry of Science & Technology
- Ministry of Agriculture & Food Security;
- Ministry for Coordination of Environmental Affairs;
- Ministry of Health;
- Ministry of Industry and Trade;
- Ministry of Fisheries & Inland Waters; and
- Ministry of Economy and Finance

GIIBS meets on a quarterly basis and representatives from public and private entities and experts may be invited to the meetings of GIIBS. The GIIBS is empowered to:

- Advise the government in decision making on safe transfer, handling and use of GE products;
- Coordinate the development and updating of rules that adequately address the country's sustainable development objectives, consistent with the Cartagena Protocol on Biosafety;
- Produce periodic technical reports on the status of the biotechnology and biosafety in Mozambique;
- Ensure the exchange of biosafety information at the national, regional and international levels;
- Promote public awareness and education programs on biotechnology and biosafety at a national level;
- In collaboration with other relevant entities, evaluate the biosafety component in the applications, proposals and projects related to activities involving GE, based on risk assessment reports, inputs from the public and any other socio-economic considerations;
- Establish technical and scientific requirements for GE development and trials;
- Promote short-, medium- and long term training programs on biotechnology and biosafety; and
- Ensure the monitoring and evaluation of the enforcement of the Regulation.

The Essence of the Mozambique Biosafety Regulation

Mozambique Biosafety Regulation is made up of seventy four articles, covering all aspects of biosafety related to the management of GE crops. The object of it is described in the second article stating that "*The present regulation establishes Biosafety norms and mechanisms of control of authorization of import, export, transit, research, liberation to the environment, management and use of Genetically Modified Organisms and its derivate, resulted from modern Biotechnology, contributing to the human health safety and environment and, particularly to the conservation of the biological diversity*". By saying this, Mozambique is included in the few African countries that formally authorize any activity with GE products.

The Process to obtain the Authorization

The Mozambique Biosafety Regulation determines the norms and processes for public and private sector tending to acquire authorization to manage GE products in the country. The process includes an application, ministerial dispatch, public advisement of the decision, and proof of technical and financial competence. Applicants send their proposed trials to the Ministry of Science & Technology. The GIIBS is the advisory board to the Minister who approves/disapproves, after its recommendations.

Risk Management Evaluation, Confidentiality, Information Fidelity and Responsibility

Previously this chapter of the regulation left all liability aspects to the investor. It now states that the evaluation of risk of GE products resulting in a permit for import, export, transit, research, and release to the environment, management, and use of GE products needs to comply with technical and scientific requirements defined by the National Biosafety Working Group (GIIBS - Grupo Inter-Institucional Sobre Bio-Segurança) and be approved by the National Biosafety Authority. This chapter also covers information fidelity, accidents and responsibility. GIIBS can interact with the operator.

(b) APPROVALS

No plants or crops have been approved or registered in Mozambique for cultivation. However, the first GE corn trial started in 2016/17 cropping season. Post foresees approvals for cultivation in the next few years.

(c) STACKED EVENT APPROVALS

The Mozambique's Biosafety Legislation does not indicate how it will handle stack event approvals.

(d) FIELD TESTING

With the approved Decree, the Mozambique Biosafety Regulation allows the public and private sector to research GE crops. Research is subject to prior application, field and greenhouses inspection, confined research project submission and monitoring measures, and risk control. The first confined trial started in the 2016/17 cropping season. Post expects preliminary results to be reported in 2018.

(e) INNOVATIVE BIOTECHNOLOGIES

Not Applicable.

(f) COEXISTENCE

There is no specific guideline for coexistence and Mozambique does not have a national organic standard in place.

(g) LABELING

In Mozambique, labeling of GE products is compulsory. The GIIBS coordinator stated that all GE food products need to be labeled. However, due to poor control capabilities, some food commodities may be entering in the country unlabeled. The government is planning to reinforce control measures to ensure that all GE imported foods are properly labeled.

(h) MONITORING AND TESTING

There is no system in place for testing and monitoring of GE products.

(i) LOW LEVEL PRESENCE POLICY

There is currently no low level presence policy in Mozambique.

(j) ADDITIONAL REGULATORY REQUIREMENTS

According to the Mozambican Biosafety Legislation, there are no additional product and/or seed registration required, beyond GE crop approval, prior to use. Re-registration is not required.

(k) INTELECTUAL PROPERTY RIGHTS

The last two chapters of the Mozambican Biosafety Regulation discuss confidentiality and intellectual property and public participation and access to information. It protects research information and intellectual property while foreseeing public participation and information access.

(l) CARTAGENA PROTOCOL RATIFICATION

The Parliament of Mozambique ratified the Cartagena Protocol on Biosafety in 2001(Resolution No. 11/2001, of December 20th) and created GIIBS to coordinate biosafety activities in Mozambique.

(m) INTERNATIONAL TREATIE/FORA

Mozambique is a signatory member of *inter alia*:

- The Agreement on the Application of Sanitary and Phytosanitary Measures of the World Trade Organization (WTO-SPS)
- Codex Alimentarius Commission (Codex)
- International Plant Protection Convention (IPPC) of the Food and Agricultural Organization (FAO)

(n) RELATED ISSUES

There are no other issues related to plant biotechnology that are not captured under the current headings.

PART C: MARKETING

(a) PUBLIC/PRIVATE OPINIONS

Most people in Mozambique are not aware of the benefits and constraints of biotechnology. Recently, FAS Maputo attended the Mozambican Peasants Organization (UNAC)'s VI International Conference on Land Use and Seeds, held in Maputo October 17-18, 2017. The conference focused on two themes; the unwelcome presence of multinationals in Mozambican agriculture and the total rejection of biotechnology. "No to GMOs, no to the Water Efficient Maize for Africa (WEMA) trials in Mozambique. We want to keep our native and local varieties of seeds," stated the Mozambican Peasants Organization (UNAC) president. Most small farmers that are calling for a ban on GE seeds may not be fully aware of the pros and cons of biotechnology. However, among scientists and the government there is general support for it.

(b) MARKET ACCEPTANCE/ STUDIES

If Bt cotton and drought tolerant corn seed become available, Post does not foresee any rejection from commercial farmers, as the farmers have requested this technology for a long time. Based on recent findings on (a) above, subsistence farmers may be reluctant for adoption. Thus, outreach programs are required. At this moment, post is not aware of any marketing studies on GE products conducted in Mozambique.

CHAPTER 2: ANIMAL BIOTECHNOLOGY

PART D: PRODUCTION AND TRADE

(a) PRODUCT DEVELOPMENT

At the moment, there is no GE or genome edited animals (and/or clone) under development in Mozambique.

(b) COMMERCIAL PRODUCTION

Mozambique does not commercially use or produce any livestock clones, offspring clones, GE animals, or products derived from animal biotechnologies. However, the country does use artificial insemination.

(c) EXPORTS

Mozambique does not export GE animals, livestock clones, or products from these animals.

(d) IMPORTS

Mozambique does not import GE animals, livestock clones, or products from these animals.

(e) TRADE BARRIERS

Post has not identified any additional biotechnology-related trade barriers that may negatively affect U.S. exports, or have the potential to do so.

PART E: POLICY

(a) REGULATORY FRAMEWORK

N/A

(b) INNOVATIVE BIOTECHNOLOGIES

N/A

(c) LABELING AND TRACEABILITY

N/A

(d) INTELLECTUAL PROPERTY RIGHTS (IPR)

N/A

(e) INTERNATIONAL TREATIES/FORA

N/A

(f) RELATED ISSUES

PART F: MARKETING

(a) PUBLIC/PRIVATE OPINIONS

(b) MARKET ACCEPTANCE/STUDIES

There are no market acceptance studies on Animal Biotechnology in Mozambique.