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Ghana

Biotechnology - GE Plants and Animals

Agricultural Biotechnology

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Report Highlights:

This executive summary and sections II, III were updated.

The passing of Ghana's Biosafety Bill has been delayed. Presently the bill is at the cabinet yet to be sent to Parliament for debate. The National Biosafety Committee (NBC) put forward a Biosafety Legislative Instrument (LI) to circumvent the delay in the passage of the Biosafety Bill in order to allow scientific advancement. The LI only allows for field trials of biotech products but not their commercialization. The LI was passed by the Ghana Parliament in May, 2008.

Section I. Executive Summary:

U.S. food exports to Ghana consist primarily of rice, poultry, and other consumer oriented food products. U.S. BICO data showed a decrease in total US agricultural exports in CY 2009, with exports at $52 million, down from $86 million in 2008. Although Ghana remains one of the largest U.S. rice markets in Sub-Saharan Africa, U.S. rice exports in CY 2009 were $21 million, down from $32 million in CY 2008,. The United States is one of the largest suppliers of poultry in Ghana with its main competitor being Brazil. In CY 2009 U.S. poultry exports to Ghana remained strong at $20.5 million, only slightly down from a record $21 million in CY 2008. U.S. exports of high value products (HVP) including vegetable oils, fruit and vegetable juice, pulses, processed fruits and vegetables, sweeteners and other products also declined last year. At present, Ghana has no specific law governing agricultural biotechnology. The United Nations Environment Program and the Global Environment Facility (UNEP/GEF) provided financial and technical support towards the drafting of the Biosafety Framework for Ghana that was completed in July, 2004. The draft Biosafety Bill establishes the National Biosafety Authority as the administrative body responsible for all issues related to Biotechnology in Ghana. According to official sources, the Biosafety Bill now has now been sent to cabinet for review before it is sent to parliament to be passed into law. The process has been slow, and it is unclear as to when the draft bill will be passed.

The National Biosafety Committee (NBC), however, has put forward a Biosafety Legislative Instrument (LI) to circumvent the delay in the passage of the draft Biosafety Bill in order to allow for scientific advancement. The LI was passed by Parliament in May, 2008. The LI authorizes the conduct of confined field research/trials of genetically engineered products but does not allow the commercialization or release of products to farmers and consumers.

Officials of the NBC have indicated that some of the products they are looking at for biotech research include cowpea, cassava, corn and sweet potatoes. Cotton is a crop of concern and the Ministry of Agriculture and the NBC are expected to dialogue with the Cotton companies regarding biotech cotton. This is in light of the fact that Burkina Faso is already testing biotech cotton and is proceeding to import transgenic cotton seeds for production and marketing. It is expected that the cross border transfer of biotechnology cotton seed from that country is inevitable. No contained work or field-testing of biotechnology cotton activity has been initiated yet in Ghana according to officials at The Biotechnology and Nuclear Agricultural Research Institute (BNARI).

Ghana ratified the Convention on Biosafety Diversity on August 29, 1994 and the Cartagena Protocol on Biosafety on May 30, 2003.

The draft Biosafety Bill stipulates that, all biotechnology products will require a permit. The regulations will govern procedures for contained work and field trials on biotechnology products; release into the environment, importation, exportation and transit of agricultural biotechnology products. Under the draft law, the current regulatory agencies will be responsible for monitoring and enforcement of biotechnology products.

According to Government of Ghana (GOG) officials in the Ministries of Agriculture, Trade and Environment, the GOG realizes and appreciates the benefits of modern biotechnology. Although the political will exists, a "precautionary approach" to safeguard against "undesirable consequences on human health" and the environment has been undertaken. The passing of the Ghana Biosafety Bill is still not eminent.

Section II. Plant Biotechnology Trade and Production:

A. Commercial Production of Biotechnology Crops

Ghana does not currently produce any biotechnology crops commercially. Capacity and knowledge exist for the development and production of modern agricultural biotechnology crops according to the National Coordinator of the National Biosafety Project. The coordinator and scientists at the Biotechnology and Nuclear Agricultural Research

Institute (BNARI) stated that biotechnology activity in Ghana is at the diagnostic level. Scientists are assessing genetic diversity in both food crops and industrial crops as in pests, diseases, yields and maturity periods as a prelude to modern biotechnology development. With transgenic insect-resistant cotton soon to go into commercial production in Burkina Faso, it is likely that some cotton seed will cross the border into Ghana. Officials of the NBC have indicated that some of the products they would be looking at include cowpea, cassava, corn and sweet potatoes. Cotton is a crop of concern that the Ministry of Agriculture and the NBC will be dialoguing with the Cotton companies.

B. Biotechnology Crops under Development

There are no biotechnology crops currently under development in Ghana that will be on the market in the near term. Some contained experiments using modern agricultural biotechnology methods are being carried out at the Crops Research Institute and BNARI. These include virus disease resistance in cassava, pest and disease resistance in cowpea and improvement of lysine strain in corn. Also Ghana and Cote d'Ivoire are jointly performing contained work on the Cape St Paul Virus Wilt in coconut along the border of the two countries.

C. Imports of Biotechnology Crops/Products

Ghana officially does not import bioengineered products. However agricultural products such soybean meal, soybean oil and processed food are freely imported from the United States, the EU, Argentina and Brazil that may contain biotech elements.

D. Food Aid

U.S. food aid programs exist in Ghana. Wheat has been monetized under USDA food aid programs in the past few years. Other products include soybean products, milk powder and edible oil that have been utilized for direct feeding programs.

E. Production of Biotechnology Crops Developed Outside the United States

Presently Ghana does not produce any biotechnology crops.

Section III. Plant Biotechnology Policy:

A. Regulatory Framework for Agricultural Biotechnology

The GOG established a National Biosafety Committee in 2002 whose mandate was to draft the Biosafety bill, produce guidelines for the implementation of the biosafety law and to prompt the GOG on Biotechnology issues. It is made up of officials of government Institutions, scientists, farmer organizations, Friends of the Earth organizations and other stakeholders. It is a working committee that is continuously dialoging with the GOG for the passage of the Biosafety law. They drafted the Biosafety Bill in 2004 and have since produced the National Biosafety framework and five biosafety guidelines (see section VI Reference material)

i. Responsible Institutions for Implementing the Biosafety Bill

The institutions that will be set up by the Government of Ghana when the Ghana Biosafety Bill is passed are:

The National Biosafety Authority (NBA)

The Technical Advisory Committee (TAC)

Institutional Biosafety Committees (IBC)

The NBA is the designated national authority on all issues related to modern agricultural biotechnology in Ghana. All applicants except for contained use and field trials will go through this authority. The governing body of the NBA is a Board whose chairman and members are appointed by the President for a period of three years.

The TAC will consist of not more than eleven individuals from the regulatory agencies and from the private sector who are knowledgeable in science and socio-economic matters related to biotechnology. The TAC is the national advisory

committee on matters concerning or related to biotechnology and will carry out risk assessments of applications at the request of the Board. The Minister of Food and Agriculture appoints the members based on recommendations by the Board for a period not exceeding five years.

The IBC reviews applications for contained use and field trials.

The regulatory agencies of the Government of Ghana are responsible for monitoring and enforcement. They will also be represented on the TAC. The agencies include:

- The Food and Drugs Board– Food safety and related matters
- Plant Protection and Regulatory Services/MOFA – Plant health and related matters
- Veterinary Services Department/MOFA – Animal health and related matters
- Environmental Protection Agency – Environmental releases and related matters
- Customs, Excise and Preventive Services – Border handling of biotechnology products in collaboration with agencies listed above.

ii Role and membership of the National Biosaftey Authority

The national focal point on Biosafety in Ghana is the Ministry of Science and Environment (MEST) which was reconstituted about year ago. The MEST would be responsible for liaising with the Secretariat of the Convention on Biological Diversity for the administrative functions required under the Cartegena Protocol on Biosafety.

The Ghana Biosafety Regulatory system is a coordinated framework and the Biosafety Bill establishes the National Biosafety Authority (NBA), which will be interdisciplinary in nature, to process applications relating to biotechnology substances under the Act. The NBA will ensure adherence to the Cartagena Protocol on Biosafety through implementation of the national biosafety guidelines and other regulations. Additionally the bill makes provision for a governing Council, the Board, tasked with decision-making with a Technical Advisory Committee that will provide technical advice to the Board of the NBA. The establishment of the Institutional Biosafety Committee (IBC) is also provided under the bill. The bill also provides for issuance of further guidelines to facilitate better performance of the National Biosafety Authority.

The NBA will have the powers as stated under section 39 of the Biosafety Bill to draft and adopt regulations or guidelines to ensure safety of humans and the environment; stop a project through the relevant IBC after establishing that further continuation of the project is unsafe to the personnel, community and environment; and approve deregulation of all regulated materials for free movement and commercial release on the recommendation of relevant IBCs. The bill states that a person or organization intending to introduce a biotech product into the environment or import or place a biotech product on the market must first obtain the written approval of the NBA.

Composition of the governing body of the National Biosafety Authority includes:

- An expert in biotechnology and related biological sciences including biosafety, as Chairman
- The Chairman of the Technical Advisory Committee
- The Chief Director, or the representative of the lead Ministry on Biotech issues.
- One representative, Association of Ghanaian Industries (AGI)
- One legal practitioner of not less than ten years experience
- One representative of non governmental organizations (NGO)
- Two other persons to be nominated by the president, one of whom should be a woman
- The Chief Executive Officer, National Biosafety Authority

iii. Assessment of Political Factors

The Biotechnology and Nuclear Agricultural Research Institute (BNARI) of the Ghana Atomic Energy Commission (GAEC) coordinated the project to draft a Biosafety Framework for Ghana between November 2002 and July 2004. The UNEP/GEF provided financial and technical support for the project. The framework is unique to Ghana but it is modeled after the UNEP/GEF blueprint which includes: a government policy on biosafety, a regulatory regime, a system to handle requests for authorizations (including risk assessment, decision-making) and administrative functions, systems for 'follow up' (such as enforcement and monitoring for environmental effects), and systems for public awareness and participation. The text of the Framework and draft Biosafety Bill is available at the UNEP/GEF website (www.unep.ch/biosafety/development/country reports/GHNFrep.pdf).

The Biosafety Framework states that there is no specific policy on biosafety in Ghana, rather that the position is guided by other principles stated in the National Science and Technology Policy (2000), the Constitution (Art 36, 41) and the Ghana Poverty Reduction Strategy (GPRS). The proposed policy appears favorable to the use and acceptance of biotechnology. However, at the same time the GOG ratified the Cartagena Protocol on Biosafety in May 2003. Therefore, the "precautionary approach and the environmentally sound management of biotechnology" are also factors that were strongly considered in drafting the Framework and Biosafety Act (in draft). For example, the Act begins with stating that the first objective is "to ensure, in accordance with the precautionary principle, an adequate level of protection in the field of safe transfer, handling and use of genetically Modified Organisms (GMO) that may have an adverse effect on the environment."

B. Approval of Biotechnology Crops

No law exists to approve biotechnology crops for food, processing and feed.

C. Field Testing

There is no field testing of biotechnology crops in Ghana.

D. Stacked Events

The NBA does not require additional approval for stacked events.

E. Coexistence

Ghana's proposed Biosafey bill is silent on co-existence.

F. Labeling

Ghana requires labeling for packaged foods and feeds. The Foods and Drugs Board (FDB) General Labeling Rules, 1992, (L. I. 1514) stipulates that food labeling be informative and accurate. Labeling of packaged and prepackaged products is for purposes of health, food safety and need to know. The minimum labeling requirements are that labeling should be clear, concise and in English; should have product name, net mass/weight, batch number and expiry date; list of ingredients and food additives must be stated. It is mandatory to label any prepackaged food item that has nutritional composition. Mandatory labeling of biotechnology products is not in the current draft bill. The regulations are being strictly enforced, but they are not specific to biotechnology products.

G. Biosafety Protocol

Ghana ratified the Convention on Biological Diversity on August 1994 and the Convention's Cartegena Protocol on Biosafety on May 30, 2003. As stated in the National Biosafety Framework for Ghana, the Protocol is in consonance with the Ghana Constitutional obligations, Ghana environmental law and policy and the fulfillment of Ghana's treaty obligations. We are not aware of any significant impact on trade.

H. Biotechnology-Related Trade Barriers

We are not aware of any biotechnology-related trade barriers affecting U.S. exports to Ghana.

I. Pending Legislation

Ghana has prepared a draft Biosafey bill yet to be passed. According to official sources the Biosafety bill has been sent from the Cabinet to the Attorney General's Office for further legal review before it is sent back to the Cabinet, then to Parliament for the bill to be passed into law. The process has been slow and it is not clear as to when the draft bill will be passed. Mandatory labeling of biotech products is not in the current draft bill. The National Biosafety Committee (NBC) has promulgated a Biosafety Legislative Instrument (LI) to circumvent the delay in the passage of the Biosafety Bill in order to allow scientific advancement. The LI was passed by Parliament in May, 2008.

The LI used the existing CSIR Act 521 of 1996 as a template, since it has provisions for the conduct of research in general, seeks to simply extend this to the conduct of research on Genetically Modified Organisms (GMO). According to officials of BNARI, the LI recognized and empowered the NBC as the national focal Point on Biosafety. It also authorized the conduct of confined field research/trials, provided the regulations for the conduct of confined field trials but did not allow the commercialization or release of products to farmers and consumers.

Scientists in Ghana have called for the need to develop capacity for genetically modified food safety evaluation, rapid determination procedures for GM containing foods and build capacity to implement biosafety legislation.

J. Technology fee

Ghana does not have technology fees for bioengineered crops and does not have legislation in place to collect such fees.

Section IV. Plant Biotechnology Marketing Issues:

A. Market Acceptance

In Ghana, the majority of people are not aware of modern agricultural biotechnology products and the issues involved. Post discussions with representatives of some local Farmer Organizations (NGOs) in Ghana revealed that they have been involved in the process for the development of the Biosafety Framework for Ghana. Their major concerns, regarding public awareness, participation and decision-making have been included in the biosafety guideline and should be addressed during the implementation process.

B. Focus group Survey

Information and discussions on modern biotechnology have been undertaken among GOG officials, scientists and researchers. We are not aware of any specific study assessing Ghanaians' acceptance of biotechnology products. However, we would expect that the Ghanaian producer, importer, retailer and consumer would accept biotechnology inputs if it increased production and income. Currently Ghana imports processed products from Europe and the United States that may contain biotechnology elements.

Ghana currently exports non-traditional food products especially pineapples, bananas and chili peppers to Europe.

Section V. Plant Biotechnology Capacity Building and Outreach:

A. Government or USDA Funded Outreach activities

Ghana is clearly moving forward on biosafety and biotechnology. However, Ghana could benefit from capacity building outreach programs that would support science based regulatory efforts and provide accurate information to the broader public on the positive benefits of biotechnology.

USDA has funded biotechnology training over the last few years via the Borlaug and Cochran programs.

USAID, through the Global Program for Biosafety Systems (PBS) has the purpose of promoting the judicious use of modern biotechnology in Ghana to increase agricultural productivity with linkages to regional and global markets. The

International Food Policy Research Institute (IFPRI) was the lead institution that was implementing the project. U.S. based biotechnology research institutions participated in the program. The overall objectives of the PBS program include: 1) Establish an enabling environment for the testing and use of biotechnology products; 2) Strengthen skills and increase capacity for near-term conduct of field trials and food safety assessments; 3) Develop and implement a strategic plan for communication and outreach that engages diverse stakeholders and the general public.

PBS has been working primarily with the Forum for Agricultural Research (FARA) Biotechnology and Nuclear Agricultural Research Institute (BNARI) of the Ghana Atomic Energy Commission (GAEC). Other partner institutions and key stakeholders, and people to whom the message have been targeted include the Ministries of Education, Youth and Science, Local Government and Environment, Agriculture, Trade and Health, universities, research and other public and private sector groups.

Although parliamentarians through the PBS have been sensitized on biotechnology and the Ghana Biosafety Bill, the passage of the bill has been slow.

B. Country Specific Needs

In order to facilitate GOG effort to move forward on biotechnology legislation, there is the need to create awareness among government officials and the academia who can influence decisions in parliament with the determination to fast-track the creation of an enabling regulatory environment for biotechnology.

Training to build capacity is required for the personnel of the Ministries of Agriculture, Environment, Science and Technology, to be able to develop a biosafety protocol.

Section VI Reference Material

- National Biosafety Framework Document [ISBN: 9988-8275-4-7]
- National Biosafety Guidelines [Part I-Introduction to biosafety Guidelines] [ISBN: 9988-8275-0-4]
- National Biosafety Guidelines [Part II-Biosafety Guidelines for laboratory and field work] [ISBN: 9988-8274-3-1]
- National Biosafety Guidelines [Part III-Biosafety Guidelines for movement of regulated materials and commercial releases][ISBN: 9988-8274-8-2]
- Risk Assessment Guidelines [ISBN: 9988-8275-1-2]
- Public Participation Guidelines [ISBN: 9988-8275-2-0]
- Administrative Guidelines [ISBN: 9988-8275-3-9]
- http://www.unep.ch/biosafety/development/countryreports/GHNFrep.pdf
- http://www.biodiv.org

Note: The first two documents and highlights of the others can be found in the UNEP website given in 8 above. In addition all the documents can be accessed on the website indicated in 9 above.

Section VI. Animal Biotechnology:

In Ghana genetic engineering in the development of agriculturally relevant animals is not being practiced. Ghana's proposed Biosafey bill is silent on animal biotechnology.

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