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**Date:** 6/22/2012

**GAIN Report Number:** GH1203

## **Ghana**

### **Agricultural Biotechnology Annual**

#### **2012 Ghana Agricultural Biotechnology Report**

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**Report Highlights:**

This executive summary and sections II, III, IV, V and VI were updated.

The President of the Republic of Ghana signed the Ghana Biosafety Act, 2011 (Act 831)

December 2011 following the passage of the Biosafety Bill by the Ghanaian Parliament, in June 21, 2011. The Biosafety Act, 2011 (Act 831), will create a favorable environment for the development and commercialization of biotechnology seeds and crops. It is anticipated that biotech cotton, sweet potato, cassava, cowpea, corn, soy, and rice will be developed for the Ghanaian market over the next few years. Ghana's biosafety law is considered user friendly as it does not contain any labeling requirements for biotech or genetically modified food products or strict liability provisions. This should help the country to respond to the challenges of food security and climate change. The National Biosafety Authority, which is to manage the implementation of the Ghana Biosafety Act 2011 (Act 831) in Ghana, is yet to be established.

## **Section I. Executive Summary:**

U.S. food exports to Ghana consist primarily of rice, poultry, wheat and other consumer oriented food products. U.S. Customs data showed an increase in total US agricultural exports in CY 2011, with exports at \$110.5 million, up from \$71 million in 2010. Although US rice exports to Ghana is high, rice from Asian sources is in strong competition. U.S. rice exports in CY 2011 were \$52.4 million up from \$44 million in CY 2010. The U.S. is one of the major suppliers of poultry in Ghana with the main competitor being Brazil. In 2011 U.S. exports of poultry to Ghana was an all time high of \$34 million, up from \$18 million in 2010. In 2011 the US exported \$12.4 million of wheat to Ghana. U.S. exports of high value products (HVP), including vegetable oils, fruit and vegetable juice, pulses, processed fruits and vegetables, sweeteners and other products, continues to grow.

The President of the Republic of Ghana signed the Ghana Biosafety Act, 2011 (Act 831) in December 2011 following the passage of the Biosafety Law by the Ghanaian Parliament, in June 21, 2011. The Embassy has a copy of the Ghana Biosafety Act, 2011 (Act 831). The Ghana Biosafety Act, 2011 (Act 831) establishes the National Biosafety Authority (yet to be established) as the administrative body responsible for all issues related to Biotechnology in Ghana. The Act establishes biosafety regulations that will govern procedures for contained research work and field trials on biotechnology products; release into the environment, commercialization, importation, exportation and transit of agricultural biotechnology products. The Act does not apply to biotechnology products that are pharmaceuticals for human use.

The Ghana Biosafety Act, 2011 (Act 831) will create an enabling environment for the development and commercialization of biotech seeds and crops such as biotech varieties of cotton, sweet potato, cassava, cowpea, corn, soy, and rice. The Biosafety legislation does not contain any labeling requirements for biotech or genetically modified food products, or strict liability provisions. The Biosafety Act 2011 (Act 831) stipulates that, all biotechnology products will require a permit from the National Biosafety Authority (Yet to be established). Under the biosafety law, existing regulatory agencies such as the Ghana Food and Drugs Board; Environmental Protection Agency; and Ghana Customs will be responsible for monitoring and enforcement of biotechnology products.

Prior to the Passage of the Biosafety Bill the Ghana parliament passed a Biosafety Legislative Instrument (LI) in May 2008 that authorized the conduct of confined field research/trials of genetically engineered products but did not allow for the commercialization or release of products to farmers and consumers.

Ghana ratified the Convention on Biological Diversity on August 29, 1994 and the Cartagena Protocol on Biosafety on May 30, 2003. The United Nations Environment Program and the Global Environment Facility (UNEP/GEF) provided financial and technical support for the drafting of the Biosafety Framework for Ghana that was completed in July, 2004. The USAID-sponsored Program for Biosafety Systems (PBS), implemented by a consortium led by the International Food Policy Research Institute (IFPRI), also played a significant role in developing the underlying legal framework for biotechnology and biosafety policy in Ghana in 2004-2008. In recent years PBS has been hosted in West Africa by the Forum for Agricultural Research in Africa (FARA).

The United States and Brazil co-sponsored and successfully organized an international biotechnology conference entitled “Biotechnology as a Tool for the Sustainable Development of Agriculture,” in September 20-21, 2011 at La Palm Royal Beach Hotel, Accra, Ghana. The participants shared their experiences with biotechnology and included decision makers and speakers from the US, Brazil, Uganda, Tanzania, and Ghana.

## **Section II. Plant Biotechnology Trade and Production:**

### **A. Commercial Production of Biotechnology Crops**

The Ghana Biosafety Act, 2011 (Act 831) will pave the way for a number of biotech seeds and crops to be developed for the Ghanaian market over the next few years, including varieties of cotton, sweet potato, cassava, cowpea, corn, soy, and rice. Ghana does not currently produce any biotechnology crops commercially. The capacity and knowledge exist for the development and production of modern agricultural biotechnology crops. According to the Government of Ghana (GOG) sources, most research institutes have stated that biotechnology activity in Ghana is still at the diagnostic level. Scientists now are assessing the genetic diversity of both food crops and industrial crops, focusing on pests, diseases, yields and maturity periods as a prelude to modern biotechnology development.

### **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. With the passage of the Ghana Biosafety Act, 2011 (Act 831) research scientists are preparing to submit biotechnology research proposals to the National Biosafety Authority when established. However, some contained experiments using modern agricultural biotechnology methods are being carried out by research institutes and universities in Ghana. The contained research includes 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 plantations along the border of the two countries.

Presently biotechnology research is being regulated by the National Biotechnology Committee (NBC). This is because the new law states that *"until regulations are made to implement the law, the L.I 1887 which regulates research will continue to operate as if made under the law"* according to GOG sources. Currently some research institutes have submitted applications for consideration to the NBC to undertake research on Bt. Cow Pea, High Protein Sweet Potato and rice.

### **C. Imports of Biotechnology Crops/Products**

Ghana officially does not import bioengineered products. Agricultural products such as soybean meal, soybean oil and processed foods are freely imported from the United States, the European Union, Argentina and Brazil that may contain biotech elements.

### **D. Food Aid**

There are no U.S. food aid programs currently in Ghana.

### **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 forward on Biotechnology issues. It is made up of officials of government institutions, scientists, farmer organizations, and other stakeholders. It is a working committee that continuously dialogued with the GOG for the passage of the Biosafety law. It drafted the Biosafety Bill in 2004 and produced the National Biosafety framework and five biosafety guidelines (see section VI Reference material). The Ministry of Environment, Science and Technology (MEST) which is the focal point for Biosafety in Ghana is yet to establish the National Biosafety Authority to manage the implementation of the Ghana Biosafety Act 2011 (Act 831). Currently MEST is in the process of forming the Board of NBA. In the interim the NBA will be operating as a small secretariat until it is constituted. Therefore, biotechnology research is regulated by NBC.

### Responsible Institutions for Implementing the Biosafety Bill

The institutions to be set up by the GOG now that the Ghana Biosafety Act 2011 (Act 831) has been passed are:

The National Biosafety Authority (NBA)

The Technical Advisory Committee (TAC)

Institutional Biosafety Committees (IBC)

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.

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. 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.

IBC reviews applications for contained use and field trials.

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

- The Food and Drugs Board (FDB)– 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.

### Role and membership of the National Biosafety Authority (NBA)

The national focal point on Biosafety in Ghana is the Ministry of Environment, Science and Technology (MEST). MEST will be responsible for liaising with the Secretariat of the Convention on Biological Diversity for the administrative functions required under the Cartagena Protocol on Biosafety. The MEST is yet to establish the NBA to manage the implementation of the Ghana Biosafety Act 2011 (Act 831).

The Ghana Biosafety Regulatory system is a coordinated framework and the Biosafety Act 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 Act makes provision for a governing Council, the Board, to have a technical advisory committee that will provide advice to the Board. Establishment of an Institutional Biosafety Committee (IBC) is also provided under the bill. The Biosafety 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 Act 2011 (Act 831) 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:

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

#### 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. 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](http://www.unep.ch/biosafety/development/country_reports/GHNFrep.pdf)).

Before the Ghana biosafety law was passed the Ghanaian's position on biotechnology was 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). However, at the same time the GOG ratified the Cartagena Protocol on Biosafety in May 2003. The Ghana biosafety Act 2011 (Act 831) have been passed and appears favorable to the use and acceptance of biotechnology. 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. For example, the Act begins by 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**

At present no biotechnology crops have been approved yet. The National Biosafety Authority (NBA) is yet to be constituted to start work on approving biotech crops (industrial crops, food crops, or feed). In the interim the secretariat of the National Biosafety Committee is handling the administrative issues on biotech until the NBA is established. The Ghana Biosafety Act 2011 (Act 831) gives powers to the NBA, when established to approve biotechnology crops.

### **C. Field Testing**

There is no field testing of biotechnology crops in Ghana yet although the Ghana Biosafety Act 2011 (Act 831) has been passed. Most of the research institutions have been doing contained research and this is an opportunity for them to start field testing.

### **D. Stacked Events**

The NBA does not require additional approval for stacked events.

### **E. Coexistence**

The Ghana Biosafety Act 2011 (Act 831) 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. The Biosafety legislation does not contain any labeling requirements for biotech or genetically modified food products, or strict liability provisions. General labeling regulations for food products are 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 Cartagena 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. FAS/Accra is not aware of any significant impact on trade.

## **H. Biotechnology-Related Trade Barriers**

FAS/Accra is not aware of any biotechnology-related trade barriers affecting U.S. exports to Ghana.

## **I. Pending Legislation**

Currently there is no pending law on biotechnology. With the passage of the Ghana Biosafety Act 2011 (Act 831), the way is paved for a number of biotech seeds and crops to be developed for the Ghanaian market over the next few years, including biotech varieties of cotton, sweet potato, cassava, cowpea, corn, soy, and rice. In May 2008 the National Biosafety Committee (NBC) 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 GOG sources, the LI recognized and empowered the NBC as the national focal Point on Biosafety. It also authorized the conduct of confined field research/trials, but did not allow the commercialization or release of products to farmers and consumers.

## **J. Technology fee**

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

## **Section IV. Plant Biotechnology Marketing Issues:**

### **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 forward on Biotechnology issues. It is made up of officials of government institutions, scientists, farmer organizations, and other stakeholders. It is a working committee that continuously dialogued with the GOG for the passage of the Biosafety law. It drafted the Biosafety Bill in 2004 and produced the National Biosafety framework and five biosafety guidelines (see section VI Reference material). The Ministry of Environment, Science and Technology (MEST) which is the focal point for Biosafety in Ghana is yet to establish the National Biosafety Authority to manage the implementation of the Ghana Biosafety Act 2011 (Act 831). Currently MEST is in the process of forming the Board of NBA. In the interim the NBA will be operating as a small secretariat until it is constituted. Therefore, biotechnology research is regulated by NBC.

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4. One representative, Association of Ghanaian Industries (AGI);
5. One legal practitioner of not less than ten years experience;
6. One representative of non governmental organizations (NGO);
7. Two other persons to be nominated by the president, one of whom should be a woman;
8. The Chief Executive Officer, National Biosafety Authority.

#### Assessment of Political Factors

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#### **B. Approval of Biotechnology Crops**

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### **C. Field Testing**

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### **D. Stacked Events**

The NBA does not require additional approval for stacked events.

### **E. Coexistence**

The Ghana Biosafety Act 2011 (Act 831) 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. The Biosafety legislation does not contain any labeling requirements for biotech or genetically modified food products, or strict liability provisions. General labeling regulations for food products are 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 Cartagena 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. FAS/Accra is not aware of any significant impact on trade.

### **H. Biotechnology-Related Trade Barriers**

FAS/Accra is not aware of any biotechnology-related trade barriers affecting U.S. exports to Ghana.

### **I. Pending Legislation**

Currently there is no pending law on biotechnology. With the passage of the Ghana Biosafety Act 2011 (Act 831), the way is paved for a number of biotech seeds and crops to be developed for the Ghanaian market over the next few years, including biotech varieties of cotton, sweet potato, cassava, cowpea, corn, soy, and rice. In May 2008 the National Biosafety Committee (NBC) 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 GOG sources, the LI recognized and empowered the NBC as the national focal Point on Biosafety. It also authorized the conduct of confined field research/trials, but did not allow the commercialization or release of products to farmers and consumers.

## **J. Technology fee**

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

## **Section V. Plant Biotechnology Capacity Building and Outreach:**

### **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), revealed that farmer organizations have been involved in the development of the Biosafety Framework for Ghana. Their major concerns, regarding public awareness, participation and decision-making have been included in the biosafety guidelines and expect that their views are addressed during the implementation process.

The passage of the Ghana Biosafety Act 2011 (Act 831) law was opposed by some farmer groups and some Non-governmental organizations particularly Friends of the Earth. These objections were either published in the print media or presented on some radio stations but there has not been any major reaction from the public. On Friday June 1, 2012 the Daily Graphic published a story covering a workshop organized by the Center for Indigenous Knowledge and Organizational Development (CIKOD) to educate Ghanaian farmers and traditional leaders on the implications of Genetically Modified Foods (GMO)s. The main presenter at the workshop was one Dr Ricarda Steinbrecher (German) who cautioned Ghanaians against patronizing GM foods.

### **Focus group survey**

Information and discussions of modern biotechnology have been ongoing among GOG officials, scientists and researchers. Post is not aware of any specific study assessing Ghanaians' acceptance of biotechnology products. However, Post expects that the Ghanaian producer, importer, retailer and consumer would accept biotechnology inputs if it increases seed production and income. Currently Ghana imports processed products from South America, 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.

### **Government or USDA Funded Outreach activities**

Ghana is clearly moving forward on biosafety and biotechnology with the passage of the Biosafety Act 2011 (Act 831) in December 2011. 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 Norman Borlaug Fellowship and Cochran Fellowship programs. In addition, USAID, through the Global Program for Biosafety Systems (PBS), has been 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 implementing the project. U.S. based biotechnology research institutions participated in the program. The overall objectives of the PBS program include: 1) Establishing an enabling environment for the testing and use of biotechnology products; 2) Strengthening the skills and increasing capacity for near-term conduct of field trials and food safety assessments; 3) Developing and implementing 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), International Food Policy Research (IFPRI), 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 has been targeted include the Ministries of Environment, Science and Technology; Food and Agriculture; Trade and Industry; and Health, universities, research and other public and private sector groups. Parliamentarians have also been sensitized on biotechnology through the efforts of PBS.

### **Country Specific Needs**

In order to facilitate the GOG effort to move forward on biotechnology regulation, there is the need to continue to boost awareness among government officials, academia, and other stakeholders especially farmers. Capacity building and training is required for the personnel of the Ministries of Food and Agriculture, Environment, Science and Technology, and other officials to be able to develop a biosafety protocol. Technical assistance may also be welcome in setting up the National Regulatory Authority office and secretariat to draft implementing regulations for the Biosafety Act 2011 (Act 831); to accept and consider applications for confined field trials or commercialization of biotech products; and to conduct outreach and awareness raising activities among potential applicants, agribusiness, farmers, and stakeholders regarding the regulatory system and application process.

### **Section VI. Animal Biotechnology:**

Animal biotechnology is not in the Biosafety law.

### **Section VII. Author Defined:**

## **POST CONTACT AND FURTHER INFORMATION**

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