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## **Guatemala**

# **AGRICULTURAL BIOTECHNOLOGY ANNUAL**

## **Food Security in Developing Countries**

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### **Report Highlights:**

The Ministry of Agriculture in Guatemala (MAGA) approved field trials for genetically modified (GMO) crops in 2004. In 2006, MAGA approved commercial production for export purposes requesting that companies carry out a risk analysis. Even though MAGA is open to GMOs, the Ministry of Natural Resources and Environment (MARN), which has final responsibility for approval, demands an environmental impact study, in addition to a risk analysis. Both private sector and academia are lobbying with different sectors to effect reform.

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

Major U.S. agricultural trade interests in Guatemala include animal feed and grains for human consumption. In 2008, Guatemala imported US\$158.5 million in coarse grains, mainly yellow corn for feed purposes. Guatemala has no GMO regulation in place that can affect commodity imports. The main concern of the Guatemalan Government (GOG) is related to the planting of modified crops that could pose a potential risk for the biodiversity. Guatemala has been declared by the United Nations as a center of biodiversity for many species, including corn, a status of national pride for Guatemala.

The Guatemalan biotechnology regulatory system allows the Ministry of Agriculture (MAGA) to approve field trials and commercial plantations (for export purposes only) of genetically modified (GM) crops, based on a risk analysis that producers must present. Unfortunately, the Ministry of Environment and Natural Resources (MARN) requires an environmental impact study, as part of its general protection law, which fails to include specific regulations for GM

crops. For MARN, GMO crops are considered high-risk products that endanger biodiversity. The lack of risk analysis regulation at MARN has stopped farmers from adopting biotechnology.

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

Guatemala does not produce any biotechnology crops. In 2004, MAGA approved field trials of the Yieldgard gene in corn for Lepidopteron resistance, and the Liberty gene in cotton for glufosinate resistance, which are both deregulated events in the U.S. Del Valle University developed ring-spot resistant papaya which has not received approval to be tested in the field, negatively impacting research on biotechnology.

Guatemala is the most deficient food country in the Western Hemisphere, with 50 percent of children under five showing signs of chronic under nourishment. It also reports one of the highest rates of neural tube defects caused by a corn based diet, highly contaminated with fumonisins. Most food aid has been well received by communities, including indigenous communities. There was one event in which environmental activists denied the distribution of donated corn to recipient families. Donors found that activists spoke on behalf of their interests and not the communities. Later, the communities demanded the donation, showing surprise that the community “leaders” had opposed the food distribution.

## **Section III. New Technologies:**

Guatemala has no policy in place regarding genetic engineering or cloning of agriculturally-relevant animals. The government approach for new technologies is to regulate if deemed necessary. Unfortunately, misinformation is the first news acquired by communities and the media. It is essential that before the government adopts a clear policy on a new technology long term educational outreach activities must be provided.

## **Section IV. Biotechnology Policy:**

Ministerial Agreement 386-2006 allows for the commercial production of modified crops, for export purposes only. MAGA is responsible for approving risk analysis conducted by interested producers. The Agricultural Scientific Institute (ICTA) of MAGA is responsible for verifying on site protocols presented as part of the risk analysis. The regulation considers simplified procedures for deregulated events. The regulation, in general, is intended to promote rather than impede the production of GM crops.

MARN has no regulation in place to approve modified crops. This Ministry has a general law, which is mandatory for any commercial activity, including agriculture. The environmental law requires an impact study to approve any commercial operation. This law, given the expense of these studies, has impeded Guatemala adoption of biotechnology. MARN has a defined policy to impede adoption of biotechnology in the country, and has included GMO crops in the high-risk category of products. Unless MARN decides to adopt science-based regulations, adoption of biotechnology in Guatemala will continue on hold.

The main concern for officially adopting biotechnology in Guatemala is related to the historical and social relevance of corn. Corn is the main staple of the Guatemalan diet and considered sacred for Mayan and indigenous communities. Indigenous families pride themselves on their ability for self-sustainability based on low technology corn farming. Each year, indigenous farmers select the first grains of the harvest for the following crop. At the level of indigenous communities, there is a complete lack of understanding for technical improvement of crops; more open communities will accept fertilizer use, for which MAGA has a subsidy program. ICTA has developed high protein content corn seed, which has had a low acceptance in those communities due to the lack of understanding of the technology.

The Guatemalan Congress approved the Cartagena Protocol in September 2003 by Legislative Decree 44-03, which was published in the official newspaper, the Diario de Centro America, Volume CCLXXII N. 72, on 10/13/03. The Protocol took effect in January 2005. By the end of 2003, the Guatemalan Technical Office for Biodiversity (OTECBIO) executed the project GUA-02-G21 “Development of the National Biosafety Framework for Guatemala”, financed by the United Nations Environmental Program (UNEP) and the Global Environment Facility (GEF) through the National Council of protected Areas (CONAP). The Framework was presented to congress as a proposed law. It seeks to regulate

all aspects of biotechnology research and commercialization, including sanitary-phytosanitary (SPS) regulations. The Framework has a definite bias in favor of advocates of the “precautionary principle” and subjecting both live organisms as well as products derived from biotechnology origin to the same bureaucratic procedure. The proposed law did not find support, either within Congress or from academia and the private sector.

On June 2009, a revised version of the Framework was presented to Congress. The modifications to the Framework are more prohibiting than the original proposal. This proposed law exclusively represents the interests of the environmentalists, and is not supported at all by any other sector. Both the academic community and the private sector are fully convinced that adopting such a stringent law implies denying Guatemala the chance of participating in the world developing process.

Guatemala is member of the World Trade Organization (WTO) and actively participates in Codex. At this moment Codex continues to discuss the idea of voluntary labeling of biotechnology products. Currently Guatemala implements Codex recommendations for regulatory purposes, thus if Codex recommends labeling, Guatemala might adopt this requirement.

MAGA is the one government agency that tries to balance policy with environmental interests. The Ministry relies on science-based principles in establishing and implementing SPS regulations. If MAGA adopts leadership in biotechnology policy, adoption of such technology might be a possibility for Guatemala.

### **Section V. Marketing:**

In Guatemala there is considerable lack of education concerning biotechnology. There is a high illiteracy rate, especially within the indigenous population. This, together with extreme poverty, makes it difficult to educate this group on the benefits of biotechnology. Environmentalists believe they have the right to speak on behalf of the subsistence agriculture farmers and indigenous communities, and have in place permanent anti-biotech strategies to keep communities under continuous fear of adopting biotechnology.

### **Section VI. Capacity Building and Outreach:**

The following U.S. government entities have carried out various activities to promote biotechnology adoption in Guatemala: U.S. State Department (Embassy Science Fellowship and Bureau of Economic, Energy, and Business Affairs Biotech Outreach Programs) U.S. Department of Agriculture (USDA) with Cochran and Borlaug Fellowships. The USDA/Foreign Agriculture Service (FAS) brought Dr. Wayne Parrott from the University of Georgia for the past three years to speak to various audiences in Guatemala. Kitty Cardwell, from CSREES/USDA, Hector Flores from Texas State University of San Marcos, and Madelyn Spirnak from State, have also addressed the Guatemalan audience in relation to biotechnology adoption.

In August 2008, USDA/FAS took a high level official delegation, including leaders from the private sector, to visit the Farm Progress Show in Boone, Iowa. The trip included a visit to Nebraska and Washington, D.C. The Public Affairs Section of the U.S. Embassy in Guatemala, together with USDA/FAS also organized a visit to the Farm Progress Show for well known Guatemalan journalists. The objective of this program was to increase the journalists knowledge of biotechnology and its benefits.

In July 2009, USDA/FAS organized a regional outreach activity to educate academia, the public, and the private sector on the benefits of technology. Using facts derived after 13 years of experience, Dr. Wayne Parrott and Alejandra Sarquis from the Inter American Institute of Agricultural Cooperation (IICA), held meetings in Guatemala and El Salvador. Both countries, along with the rest of Central America, are still in great need of educational assistance. Considering the negative indicators of education, health, economic levels, and chronic under nutrition., Guatemala is in a position to benefit greatly from the adoption of biotechnology. The challenge is to evoke political will.