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Agricultural Biotechnology Annual

Challenges to adopt biotechnology in a country with the highest level of chronic malnutrition in the Western Hemisphere

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Report Highlights:
Guatemala, at present, allows the importation of genetically engineered (GE) agricultural and food products, but has not approved the use of GE plants for agricultural production. The Ministry of Agriculture, Livestock, and Food (MAGA) approved field trials for GE plants in 2004. In 2006, MAGA approved the regulation that potentially allowed for the commercial production for export purposes requesting that companies carry out a risk analysis. Even though MAGA is open to growing GE plants, 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. For MARN, GE plants are considered high-risk products that endanger biodiversity. The lack of a risk analysis regulation at MARN has stopped farmers from potentially adopting biotechnology.

Section I. Executive Summary:
Major U.S. agricultural trade interests in Guatemala include animal feed and grains for human consumption. In 2010, Guatemala imported US$159 million in coarse grains, mainly yellow corn for feed purposes, but also white corn for human consumption. Guatemala has no restrictions on the importation of genetically engineered (GE) agricultural products for human and animal consumption. The main concern of some social groups and government institutions is that in their view, the planting of GE plants 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. Most subsistence farmers depend on low yielding traditional seeds for grain production.

Section II. Plant 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 United States. Del Valle University of Guatemala (UVG) also developed ring-spot resistant papaya which has not received approval to be tested in the field, a fact that does not encourage biotech research.

Guatemala has the highest chronic malnutrition rate in the WH, with 50 percent of children under five showing signs of chronic mal nourishment. Most food aid containing GE corn and soybeans for instance has been well received by communities, including indigenous communities. There have been several isolated events, however, during which activists denied the distribution of donated corn to recipient families.

Section III. Plant Biotechnology Policy:
Ministerial Agreement 386-2006 allows for the commercial production of GE plants 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 GE plants, except that only allows for the cultivation of GE plants for export purposes.

MARN has no regulation in place to approve GE plants; instead, it only has a general environmental law which is mandatory for any commercial activity including agriculture. The environmental law requires an environmental impact study (EIS) to approve any commercial operation. Given the expense of conducting a thorough EIS, the law has subsequently impeded the adoption of biotechnology in Guatemala. MARN has a defined policy to impede adoption of biotechnology in the country, and has included GE plants in a high-risk category of products.

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 has historically had a high level of both cultural and spiritual importance for Mayan and indigenous communities. Each year, indigenous farmers select the best grains of their harvests for the following crop. At the level of many rural communities, there is a generalized lack of understanding of technical improvement of crops.

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 October 13, 2003. 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 Protocol framework was presented to Congress as a proposed law. The framework seeks to regulate all aspects of biotechnology research and commercialization, including sanitary and 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.

In June 2009, a revised version of this framework was presented to Congress. The modifications to the framework are more prohibiting than the original proposal. This proposed law represents the interests of the environmental lobby and does not have support from other sectors. Both the academic community and the private sector are fully convinced that adopting such a stringent law implies denying Guatemala the chance of modernizing Guatemalan agriculture and addressing food insecurity.

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 FDA labeling, as the Ministry of Health also has a policy for labeling based on food safety concerns and not on processing methods. Labeling might be adopted exclusively by producers exporting to Europe.

MAGA is the one government agency that tries to balance policy with environmental interests. The Ministry understands the need to rely on science-based principles in establishing and implementing Sanitary and Phytosanitary (SPS) regulations. If MAGA were to assume leadership in biotechnology policy, adoption of such technology might be a possibility for Guatemala.

Section IV. Plant Biotechnology Marketing Issues:

In Guatemala, there is considerable lack of education concerning biotechnology which is confounded by high illiteracy rates in rural populations devoted to agriculture. 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 agricultural producers and indigenous communities, and have in place permanent anti-biotech strategies to keep communities under continuous fear of adopting biotechnology. In the local newspapers one also runs across articles which link the adoption of biotechnology with conspiracy theories centered on the transnational enterprises which are leaders in biotech and their "relationship" with the local "oligarchy" and the "empire." Oftentimes arguments against biotechnology claim that it will ruin the way of life of subsistence farmers, many of whom are indigenous and have a close connection to corn production. However, the pitting of small holder agriculture against biotechnology in the public realm in Guatemala usually does not include any consideration that all improved varieties (both conventional as GE—for corn) are adapted for the lowlands of Guatemala and not for highland conditions where many small scale, indigenous producers are located.

Section V. Plant Biotechnology Capacity Building and Outreach:
The following U.S. government entities have carried out various activities to promote biotechnology adoption in Guatemala: U.S. Department of State (Embassy Science Fellowship and Bureau of Economic, Energy, and Business Affairs Biotech Outreach Programs) and the U.S. Department of Agriculture (USDA) with Cochran and Borlaug Fellowships. The USDA/Foreign Agricultural Service (FAS) has hosted a well known professor from the University of Georgia for the past four years to speak to various audiences in Guatemala. Another expert from CSREES/USDA and a professor of social sciences from Texas State University of San Marcos have also addressed the Guatemalan audience in relation to plant biotechnology adoption. ARS/USDA and other academics have also supported biotechnology educational outreach activities, including training on science-based risk analysis.

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 information derived from 14 years of experience, a professor from the University of Georgia and an Argentinean advisor from the Inter American Institute of Agricultural Cooperation (IICA), Ing. Sarquis, held meetings in Guatemala and El Salvador.

In June-July 2010, USDA/FAS organized a regional agricultural biotechnology educational outreach program in which Dr. Wayne Parrott visited El Salvador, Honduras, Guatemala, and Belize. Honduras hosted the main activities, where USDA/FAS recognized the country's leadership in GE plant production. Delegations from the four countries attended a field trip to Comayagua Valley and Zamorano University where members of the Biosafety Committee of Honduras explained to the delegations the operational components of adoption of GE plants in Honduras.

In July 2011, USDA/FAS carried out—with the support of the U.S. Department of State—a biotechnology trade capacity building activity intended to provide science-based risk analysis guidelines for regulators, advisors, academics, and students. The activity included invited experts from Brazil, Honduras, and the United States who additionally addressed concerns by the food processing industry and farmers.