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Report Highlights:

The agricultural biotechnology sector in Bangladesh is at an embryonic stage. The country is moving toward the adoption of biotechnology for crop improvement and enhancement of the country's food security. On July 19, 2006, the National Taskforce on Biotechnology Development (NTFBD) approved the National Biotech Policy, as prepared by the Ministry of Science, Information, and Communication Technology. The new policy allows bioengineering research, and opens up new possibilities of innovation and development involving living cells. The policy emphasizes protecting indigenous community knowledge, collective innovations, and community rights. Bangladesh needs bilateral and multilateral assistance to build capacity and enhance human resources development, in order to support and implement the biotechnology policy and guidelines and develop a transparent and science-based regulatory system. Sections II-V of this report were updated on 07/24/06.

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SECTION I: EXECUTIVE SUMMARY

The Bangladeshi agricultural biotechnology sector is at an embryonic stage, but the country is moving toward the adoption of biotechnology to improve crops and to enhance the country's food security. Bangladesh officially prohibits importation for commercial use of agricultural products containing bioengineered products. On July 19, 2006, the National Task Force on Biotechnology Development (NTFBD) approved a policy framework and guidelines for biotechnology. Although Bangladesh has signed and ratified the Cartagena Protocol on Biosafety, it has not yet developed a legal framework to implement the provisions of the Protocol. The absence of a concrete biotech regulatory system could pose a barrier for the exports of US agricultural commodities to Bangladesh. The lack of effective intellectual property rights legislation is also an impediment to the development of the biotechnology sector. There is a general recognition within Bangladesh's scientific and policy community that biotechnology offers the best way to provide food security to the country's growing population. However, the country needs bilateral and multilateral assistance in order to build capacity; to develop human resources to support and implement the biotechnology policy and guidelines; and to develop a transparent and science-based regulatory system.

SECTION II: BIOTECHNOLOGY TRADE AND PRODUCTION

The Technical Committee on Crop Biotechnology in the Ministry of Agriculture has approved the import of some biotech products for contained trials; these are Golden Rice, fruit- and shoot- borer resistant Bt eggplant, late blight resistant potato, insect resistant Bt chickpea, and ring spot virus resistant Papaya. These materials are currently under green house trials, and if proved safe for human, animal, and environmental health, appear likely to be released for commercial cultivation. However, the approval process may take several years.

Bangladesh is a food aid recipient country (mostly wheat), and is likely to remain so over the coming years. Commercial imports include wheat, rice, cotton, soybean oil (mostly from Brazil), soybean meal (from India), palm oil, and corn (from India). Crops grown using imported seeds include maize, cotton, potato, and some winter vegetables such as cabbage, cauliflower, tomato, carrot, none of which are reported to be bioengineered.

There is a general political consensus in favor of biotechnology in Bangladesh. However, there is a general concern among scientists, Non Governmental Organizations (NGOs), and politicians about the safety of biotech products, particularly in the context of preserving Bangladesh's biodiversity. Some NGOs are concerned that a lack of monitoring of biotechnology crops could lead to cross-pollination of existing open-pollinated crops with bioengineered varieties. There is also the misperception that the new technology may be detrimental to the farmers' rights to seeds, because the seed companies, who are mostly multinationals, may establish "ownership" on the seeds of crop varieties under cultivation. Currently Bangladesh lacks the infrastructure to adequately administer technical procedures for assessing biotech products. The enforcement of intellectual property rights due to an arguably underdeveloped judicial system is also a constraint. The lack of purchasing power in the farm sector due to the predominance of small and marginal farmers may also restrict the wider use of biotechnology seeds, which the farmers believe are higher priced vis-à-vis non-biotech varieties.

SECTION III: BIOTECHNOLOGY POLICY

Bangladesh has yet to establish a regulatory framework for agricultural biotechnology, but it does have a National Biotech Policy. The Ministries of Agriculture (MOA), Science and Information Technology (MOSICT), and Environment and Forest (MOEF) are jointly responsible for the development of a biotechnology policy and regulatory framework. In

2000, the "Biosafety Guidelines" were developed under the leadership of the MOSICT, and were notified by the government in 2001. No serious attempt to implement the Guidelines was made, due mainly to an intra-Ministry rivalry over who should lead Bangladesh's National Committee on Biosafety. A consensus was reached that the MOSICT would lead biotechnology research and development, while the MOEF would lead biosafety efforts.

The National Task Force on Biotechnology Development (NTFBD), headed by the Prime Minister, is the apex body of the five national-level biotechnology committees that address biodiversity, biosafety, crop biotechnology, livestock and fisheries biotechnology, and medical biotechnology. A meeting of the NTFBD on July 19, 2006, approved the National Biotech Policy, as prepared by the MOSICT, and allows bioengineering research. The policy emphasizes protecting indigenous community knowledge, collective innovations, and community rights. Action programs will begin immediately to develop biotechnology in various sectors such as agriculture, health, industry, and environment. Under the policy, legal measures will be developed to achieve a "balanced" system to protect the interests of the innovators as well as the public interest.

The Secretary of the MOEF heads the National Technical Committees on Biosafety (NCB). The principal role of NCB is to draft and adopt legislation and measures to ensure the environmentally safe management of modern biotechnological development, including research, and the development, use, and trade in biotechnology products.

As the regulatory system is not yet in place, no biotechnology crop has been approved for commercial cultivation. However, the draft Biosafety Guidelines contain standards and codes of practice related to the "risks" associated with the environmental release of bioengineered products. They also propose a decision-making framework that allows experimental field testing based on (1) the testing agency's familiarity with plant and genetic modification, (2) the ability to confine the bioengineered plant, and (3) the perceived environmental impact, should the plant escape confinement. There are no separate regulations governing the labeling of biotechnology products.

Bangladesh is a signatory to the Cartagena Protocol on Biosafety. It ratified the protocol in 2004, but rules implementing the Protocol have not yet been formulated. Agricultural commodities imported by Bangladesh include mostly rice, wheat, oilseeds (rape, mustard, and soybeans), pulses (lentil and peas), maize, cotton, fresh fruits, and spices. Bangladesh is also a signatory to the Convention on Biological Diversity, and has ratified the same.

Bangladesh currently lacks an effective legislation to protect the intellectual property rights in plant varieties. A draft of the Plant Variety Protection Act, which includes as its goals the conservation of biodiversity and farmers' rights to seeds of indigenous crop varieties, has been under review by the various stakeholders for more than five years. Citing the CPB, the draft "Biosafety Guidelines" state that an Advance Informed Agreement (AIA) shall be applied by the government prior to the first intentional trans-boundary movement of bioengineered products for intentional introduction into the country's environment.

SECTION IV: MARKETING ISSUES

The Bangladeshi tariff structure does not differentiate between biotech and non-biotech agricultural commodities. Nor are there any biotech-specific non-tariff barriers on imports. The Bangladeshi importers, retailers, and consumers appear mostly unconcerned and/or unaware about the possible presence of biotechnology in imported agricultural commodities. There is no mechanism to detect the presence of biotechnology in imported food products. Price, taste, and religious considerations are the major determinants of consumers' food choice. Bioengineered seeds for planting may experience difficulties gaining market

acceptability, unless the misapprehensions about such crops are removed and prices become more affordable. Nonetheless, a large majority of scientists support biotech product development and importation, provided their food safety and environmental impacts are properly assessed, and field-testing is conducted under appropriate bio-safety guidelines.

SECTION V: CAPACITY BUILDING AND OUTREACH

The U.S. Embassy, Dhaka, organized the "International Conference on Agricultural Biotechnology" in Dhaka in August 2005. Objectives of the conference included improving stakeholder understanding of the potential opportunities, benefits, and risks of agricultural biotechnology in Bangladesh, and promoting an informed policy dialogue. Participants included U.S. and Bangladesh scientists, Bangladesh Ministers, government officials, and policy makers.

A U.S. State Department-sponsored biotech speaker visited Bangladesh in 2002 and gave a seminar on "The Economics of Agricultural Biotechnology in Developing Countries," with special reference to Bangladesh. USDA funding supports a few Bangladeshi universities' agricultural biotechnology research and capacity building. In 2001, USDA's Cochran program sponsored a Bangladeshi journalist to visit the United States in order to familiarize him with the benefits of biotechnology. The USAID is currently funding the Agricultural Biotechnology Support Project (ABSP II) and the South Asia Biosafety Program (SABP) in Bangladesh.

At the multilateral level, the United Nations' Food and Agriculture Organization (FAO) is working with the Bangladeshi Government to develop policy guidelines and regulatory documents under a project called "Capacity Building in Biosafety of GM crops in Asia." The FAO in May 2004 prepared a document called "Assessment of Utilization and Potential of Biotechnological Advancement for Agriculture Development in Bangladesh," wherein recommendations were made for institutional and framework-building for agricultural biotechnology in Bangladesh.

The US government's continued assistance and cooperation in the areas of biotechnology system development will help Bangladesh establish a transparent and science-based agricultural biotechnology regulatory framework, and develop human resources with respect to biosafety issues.

SECTION VI: REFERENCE MATERIAL

Revised "Biosafety Guidelines" - www.doe-bd.org/biosafety_guidelines.html