



SABP

The South Asia Biosafety Program (SABP) is an international developmental program initiated with support from the United States Agency for International Development (USAID). The program is implemented in India and Bangladesh and aims to work with the local governments to facilitate implementation of transparent, efficient and responsive regulatory frameworks that ensure the safety of new foods and feeds, and protect the environment.

Over the next three years, SABP will work with its in-country partners to:

- Identify and respond to technical training needs for food, feed and environmental safety assessment.
- Develop a sustainable network of trained, authoritative local experts to communicate both the benefits and the concerns associated with new agricultural biotechnologies to farmers and other stakeholder groups.
- Raise the profile of biotechnology and biosafety on the policy agenda within India and address policy issues within the overall context of economic development, international trade, environmental safety and sustainability.

ADDRESSING THE BIOTECHNOLOGY INFORMATION NEEDS OF AGRICULTURAL EXTENSION WORKERS IN INDIA

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Discussions with agricultural stakeholders, including national government, regulatory authorities, state governments, academia, and the farming industry, identified the need for biotechnology information and training to be delivered to the agricultural extension workers who traditionally advise Indian farmers. In response to this, the South Asia Biosafety Program (SABP) undertook five training-of-trainer workshops in five Indian states in 2005 and 2006. These were designed to provide biotechnology information that is appropriate and relevant to agricultural extension workers and to provide a forum for discussion and answering of commonly encountered questions about agricultural biotechnology.

Delegates for the workshops were identified in collaboration with State agricultural departments and included public sector, private sector and civil society representatives. The workshop program and materials were presented in a prominent local language or Hindi, depending on the proficiency of the speakers. Information was presented on the status of agricultural biotechnology in the world, India and the State. Mechanisms for regulation and biosafety assessment of GM crops were presented and delegates were given an opportunity to raise questions they commonly encountered and to receive answers from local expert panels. Delegates took home a handbook on answers to frequently asked questions and posters to act as teaching aids when speaking to farmers about agricultural biotechnology. The handbook and the posters were in a prominent local language for each state.

An analysis of the effectiveness of the first three workshops was undertaken in order to assess whether these workshops were meeting the needs of the extension workers. One hundred and ten delegates were randomly selected for the interviews and were interviewed in a local language. Using telephone interviews, delegates were questioned about the usefulness of the workshop and the handouts. Details of the study methodology are provided on the SABP website.

Nearly all of the respondents (99 per cent) agreed (36 per cent) or strongly agreed (63 per cent) that the workshops provided information that was useful to them as agricultural extension officers (Figure 1). This suggests that the planning and implementation was successful in meeting the immediate needs of the target group with respect to accessing information on agricultural biotechnology.

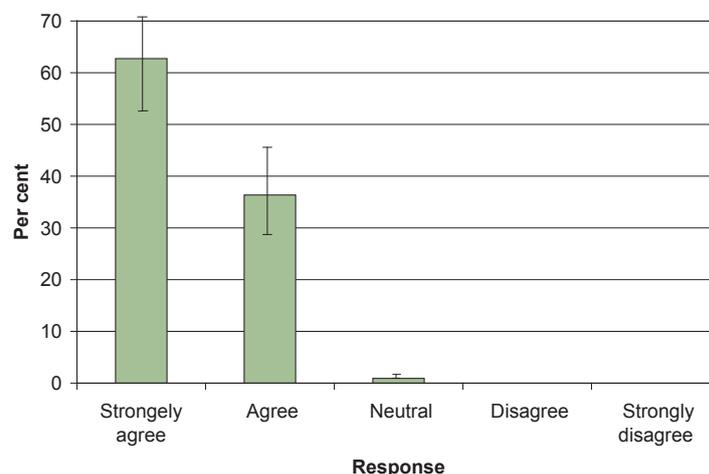


Figure 1. Distribution of responses to the statement "The workshop provided information that was useful to me as an agricultural extension officer". Confidence intervals are given at the 95 % confidence level.

Use of the handout materials was high at 89 per cent and 87 per cent of respondents for the handbooks and posters, respectively, (Table 2). This indicates that the information was useful to most of the target groups in assisting them to carry out their activities as agricultural extension workers. The use of the handbook was slightly higher than the use of the information posters and this may be attributed to the greater amount of information in the handbook, relative to the posters. In addition, a number of respondents indicated that they had placed the posters on office walls, which would limit the use of these materials as teaching aids in the field.

That 97 per cent of the respondents had been asked questions on GM crops by farmers since the workshop is a clear indication that the workshop targeted the correct stakeholder groups to enable information transfer to Indian farmers (Table 2). However, based on the size of agriculture in India, these workshops provided input to only a small group of extension workers.

While 99 per cent of the respondents indicated that the workshop provided useful information for their activities as

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CALENDAR OF EVENTS (INDIA)

Event	Organization	Date	Place
Workshops on Safety Assessment of Foods derived from GM Crops	AGBIOS and Biotech Consortium India Ltd.(BCIL)	January 22-6, 2007 January 29-2, 2007	Pune Kolkata
Regional Workshops on Issues related to Cartagena Protocol on Biosafety in association with State Agricultural Universities	Ministry of Environment & Forests (MoEF) and BCIL	February 2007	Hyderabad and Junagarh, Gujarat
Awareness workshops on GM crops with a focus on post release monitoring	Ministry of Agriculture (MoA) and BCIL	February-March 2007	Hyderabad, Chennai and Aurangabad
National Consultation on Safety Assessment of GM Food Crops	Department of Biotechnology and BCIL	February-March 2007	New Delhi, Dharward and Coimbatore
Training programmes on "Detection of LMOs"	Central Food Technological Research Institute (CFTRI)	January 16-20, 2007 and April 9-13, 2007	CFTRI, Mysore

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agricultural extension workers (Figure 1), 91 per cent of the respondents agreed that the information material helped to answer farmers' questions on GM crops (Figure 2). Considering that 97 per cent of the respondents had been asked questions by farmers since the workshop, it might be concluded that about six per cent of the delegates were able to address farmers' questions without need for the workshop information.

It is not believed to be contradictory that only 89 per cent of respondents had used the handout materials since the workshop, while 91 per cent agreed that the materials had been helpful in addressing farmers' questions. Information from the handouts could have assisted answering farmers' questions without the materials being physically used in the explanations.

Table 2. Responses to questions on the use of the resource materials and whether farmers had asked questions about GM crops since the workshop.

Question	Response Percentage; (95% CI ¹)	
	Yes	No
Have you used the hand-book in your extension work since the workshop?	89.1; (94.5; 82.0)	10.9 (18.0;5.5)
Have you used the information posters in your extension work since the workshop?	87.3; (90.0; 79.0)	12.7 (23.0;8.0)
Have farmers asked you questions about GM crops?	97.3; (99.0; 91.0)	2.7 (9.0;1.0)

¹ CI = confidence interval (upper limit; lower limit)

The format of the workshops appears to have met the needs of the agricultural extension workers at State level. Foremost to this success was probably the presentation of workshops in a local language or Hindi and the translation of workshop handouts into a local language appropriate for each state venue. The active level of participation at the workshops indicated that the information was relevant and topical, addressing an immediate need in the sector.

However, the vast number of farmers in India require more rapid dissemination of information than can be achieved by training 50 extension workers per year in each state. While this work is seen as valuable and effective, it needs to be supplemented by other outreach efforts such as distance learning to accelerate the access to information on biotechnology and new products as they enter the market.

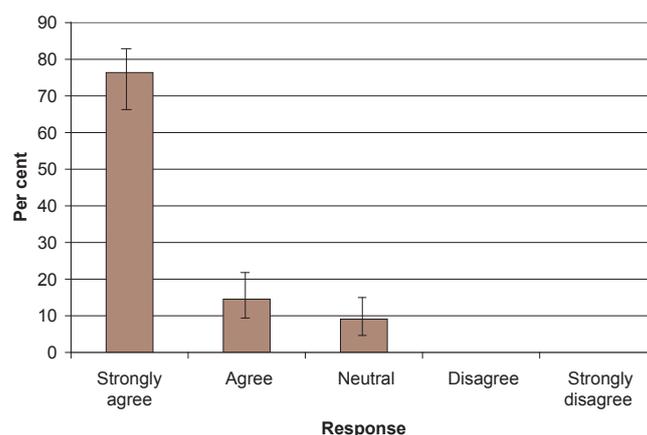


Figure 2. Distribution of responses to the statement "The information materials helped me address farmers' questions about GM crops". Confidence intervals are given at the 95% confidence level.

Based on this proof of concept and the available expertise it is hoped that planning and implementation of subsequent workshops will be forthcoming from the Indian government and State agricultural departments. Ultimately these workshops should increase the level of information available to farmers and enable them to make informed decisions on the adoption of biotechnology planting materials.

CONSULTATION ON ISSUES RELATED TO REGULATORY COMPLIANCE IN GENETICALLY MODIFIED CROPS

Under the auspices of Agriculture Biotechnology Outreach Programme, Biotech Consortium India Limited (BCIL) and All India Crop Biotechnology Association (AICBA) organized a "Consultation on Issues related to Regulatory Compliance

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Consultation - continued from page 2

in Genetically Modified Crops" on December 22, 2006 at New Delhi with concerned stakeholders viz., seed industries, agricultural scientists and government officials. The consultation provided an overview of the regulatory requirements, status of compliance and the way forward. The consultation was attended by about 50 participants and provided an excellent platform for exchange of views.

Dr. P. Ananda Kumar, Chairman, Monitoring and Evaluation Committee and Principal Scientist, National Research Center on Plant Biotechnology (NRCPB) chaired the consultation. In his keynote address, Dr. Anand Kumar indicated that India has one of the best regulatory systems in the world. However, successful implementation of any regulatory framework can be achieved only through cooperation among all stakeholders and effective regulatory compliance.

Dr. K.K. Tripathi, Advisor, Department of Biotechnology and Member Secretary, Review Committee of Genetic Manipulation gave an overview of regulatory procedures for GM crops and conditions for small-scale trials in India. He indicated that regulations are extremely important to avoid any unintended hazards and risks for which case by case studies are undertaken. He said that compliance is not an option but a mandate which everyone needs to follow.

Dr. Ranjini Warriar, Director, Ministry of Environment & Forests and Member Secretary, Genetic Engineering Approval Committee indicated that along with compliance of regulatory protocols, it is extremely important for industries to report on a regular basis to the regulatory and monitoring agencies. She stressed that there is an urgent need to maintain transparency for a smooth regulatory system and that can only be achieved with regulatory compliance and reporting.

Senior officers from four seed industries involved in development and commercialization of GM crops in India viz., Mahyco Monsanto Biotech Ltd., Syngenta India Ltd., Rasi Seeds and Pro-Agro Seed Company shared their views with respect to industry's commitment of complying with regulations and problems faced by them. Each company representative explained how they are following up on stipulated conditions laid down for field trials and commercial cultivation. A Senior Scientist from State Agriculture University who has also been a member of State level monitoring team indicated that whereas overall the compliance can be termed as satisfactory, there is an urgent need for training of field staff for recording observations and maintaining field books.

There were intensive discussions and some of the issues/recommendations that emerged are as follows:

1. Some of conditions being stipulated with the approval for commercial cultivation of Bt cotton hybrids need to be renewed such as submitting list of farmers, dealers/agents, etc., which is becoming extremely difficult to comply in view of large number of packets being sold by several companies.
2. Strengthening of State Biotechnology Co-ordination Committees and District Level Committees.
3. Involvement of nominees from the Central Government in SBCCs / DLCs in line with DBT nominees in institutional biosafety committees.
4. Reconsideration of number of field trials to be undertaken in case of approved events.
5. Capacity building of State Agriculture Universities in view of their proposed active involvement in both pre and post release monitoring.

6. Experimental field trials should be located at approachable locations for effective monitoring.
7. Detailed guidelines should be framed for the management of field trials and extensively disseminated.

While appreciating the initiative taken by BCIL and AICBA participants unanimously recommended that there is an urgent need to have regular consultations in order to have public confidence in the regulatory system.

DBT CONTEMPLATES CHANGES TO GM CROP FIELD TRIAL REGULATIONS

The Financial Express - January 10, 2007

NEW DELHI -- Faced with the problem of maintaining the country's image as an exporter of GM-free rice, the department of biotechnology (DBT) is now contemplating changes in its guidelines for regulation of field trials for genetically modified (GM) crops.

DBT secretary, MK Bhan, DBT advisor KK Tripathi and advisor in the science and technology ministry, SR Rao have suggested that no field trials of GM rice should be allowed in Basmati rice producing states—Haryana, Uttar Pradesh and Punjab.

India has a competitive advantage in the export of its premium aromatic rice—Basmati—worth millions of dollars. The recent contamination of US and Chinese rice with GM traces and the consequent refusal of the contaminated shipments by major importing countries sent shock waves across the global trade. The US rice industry incurred a loss in millions of dollars and suggested "a clean up exercise" to the US administration.

With the uprooting and burning of GM rice crops under field trials by farmers in the country and NGOs reporting cases of violation of biosafety norms, Indian rice exporters woke up to the reality and began asking for strict implementation of biosafety norms to prevent any possible contamination of exportable rice with GM traces.

The exporters even went to the extent of filing an impleadment application in the on-going writ petition filed by Aruna Rodrigues and others in the Supreme Court. Aruna Rodrigues and others have urged for a moratorium on GM crops. The DBT, in this context, called for a consultation with major stakeholders last week to thrash out the issue. In the consultation it was decided that the directorate of agriculture and agriculture universities in the states concerned would be informed about the permission for field trials of GM crops.

The village panchayats would also be informed about the field trials. The letter of permission should specifically say "confined trial" and not "contained trial."

It was also decided that all information about the field would be shared with the public through relevant websites. DBT would take steps to educate farmers and other stakeholders on biotechnology and GM crops using the services of BCIL and AGBIOS.

We welcome reader comments or suggestions. E-mail your letters to: nringma@agbios.com **Mail your letters to:** The Editor, SABP Newsletter, P.O. Box 475, Merrickville, Ontario, K0G 1N0 Canada

CALENDAR OF EVENTS (BANGLADESH)

Event	Organization	Date	Place
Conference on Promoting Biotechnology in Bangladesh: National and International Perspectives	Centre of Excellence, Dhaka University. For information see www.gnobb.org or contact Prof. Dr. Zeba I. Seraj (zseraj@citech-bd.com)	April 6-8, 2007	Centre of Excellence, Dhaka University

NATIONAL WORKSHOP ON DEVELOPMENT OF NATIONAL BIOSAFETY FRAMEWORK OF BANGLADESH

A national workshop on the "Development of the National Biosafety Framework (NBF) for Bangladesh" was held November 16, 2006 to fine tune the draft NBF document. Scientists and representatives from NGOs, the private sector working in various fields of biotechnology at different public and private research centres and universities attended. Policy makers and representatives from different ministries also participated.

The National Biosafety Framework evolved from the Bangladesh National Biosafety Development Project, which flowed from the UNEP/GEF Global Project on Development of National Biosafety Frameworks. The Project was assisted by a National Coordination Committee consisting of members from various agencies and stakeholders.

The workshop, held at the LGED Bhaban, Agargaon, Dhaka, was inaugurated by the chief guest Mr. Justice Md. Fazlul Haque, Honourable Advisor, Ministry of Environment and Forests. Special guests included Dr. Md. Nurul Alam, Executive Chairman, BARC; Prof. Dr. Ainun Nishat, Country Representative, IUCN, Bangladesh; Mr. Mohammed Osman Gani, Chief Conservator of Forests; Dr. Khandker Rashedul Haque, Director General, Department of Environment; and Mr. Mohammed Solaiman Haider, Project Director, Development of National Biosafety Framework.



Seated on the dias (from left) : Mr. M.S. Haider, Project Director, NBF; Dr. K.R. Haque, Director General, DoE; Justice M.D. Haque, Ministry of Environment & Forests; Dr. M.N. Alam, Executive Chairman, BARC; Mr. M.O. Gani, Chief Conservator of Forests; Prof. A. Nishat, Country Representative, IUCN Bangladesh speaking as the special guest.

In his inaugural address, Mr. Justice Haque said that due to unplanned urbanization and increasing population our cultivable land is being continually reduced. Moreover, agri-

cultural production is being seriously hampered by increased salinity, drought and natural disasters. With this background, he urged the participants to explore ways to double the agricultural production within the limited cultivable land using modern technologies like biotechnology. He suggested that, using biotechnology it may also be possible to develop crop varieties with increased yield and tolerance to biotic and abiotic stresses. He advocated local scientists to consider any adverse effects of genetically modified crops to the biodiversity and environment. He stated that, with the development of the National Biosafety Framework, Bangladesh has now fulfilled its obligation under the Cartagena Protocol on Biosafety to the Convention on Biological Diversity. He opined that scientists and researchers of Bangladesh who work in various fields of biotechnology should follow the Framework in the course of doing their work. He said it was his impression that scientists and policy makers will be more comfortable working on biotechnology in a safe and sound manner. The inaugural ceremony was concluded with the address and vote of thanks of Dr. Khandaker Rashedul Haque, chairperson of the function.

The workshop consisted of two technical sessions. Each session was followed by a panel discussion. There were two presentations in each of the technical sessions. In the first session Syeda Rizwana Hassan presented her paper "National Policies & Regulatory Regime in the proposed NBF" and Prof. Dr. Rakha Hari Sarker presented his paper "Administrative Systems in the Draft NBF". In the second session Prof. Sarker and Dr. Emdadul Haque Chowdhury presented their paper "Monitoring and Enforcement under NBF" and Prof. Dr. Abul Kashem presented his on "Public Awareness, Education and Participation in NBF". The panel discussions included panellists and workshop participants who gave suggestions for incorporation into the final NBF document.

The NBF document has been now revised accordingly and was endorsed by the National Coordination Committee headed by the Secretary, Ministry of Environment and Forests. The NBF can be viewed on the Internet at http://www.doe-bd.org/bangladesh_nbf.pdf

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