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BIOSAFETY PROGRAM

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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 national governmental agencies to facilitate the implementation of transparent, efficient and responsive regulatory frameworks for products of modern biotechnology that meet national goals as regards the safety of novel foods and feeds and environmental protection.

SABP is working 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 Bangladesh and address policy issues within the overall context of economic development, international trade, environmental safety and sustainability.

SEVEN YEARS OF SABP ACTIVITIES IN INDIA

Vibha Ahuja, General Manager, Biotech Consortium India Limited

The South Asia Biosafety Program (SABP) was initiated in 2005 in India with an objective to assist in strengthening of institutional governance of biotechnology through capacity building efforts to provide science based information, advice and support to realize the benefits of agricultural biotechnology. Biotech Consortium India Limited (BCIL) has been the in-country partner for SABP since its initiation and has worked over the past six years with SABP's lead organisations: AGBIOS (2005-2009), the Center for Environmental Risk Assessment (CERA) of the ILSI Research Foundation (2009-present) and the International Food Policy Institute (IFPRI; 2005-present).

The areas of activities under SABP have been primarily related to technical training and policy issues. SABP has supported and facilitated a series of activities providing high level technical expertise with an international perspective such as conferences, symposia, training programmes and preparation of study reports on specific topics. The three major areas that SABP focussed on are regulatory capacity building, food biotechnology policy, and communications and outreach working closely with and in support of leading in-country agencies as partners such as Indian Council of Medical Research (ICMR), the Department of Biotechnology (DBT), Jawaharlal Nehru University, Research and Information Systems for Developing Countries, Indian Statistical Institute, etc. An overview of the same is provided as under:

- A two day International Conference was organized under SABP by AGBIOS, ICMR and BCIL on Foods Derived from GM Crops: Issues for Consumers, Regulators and Scientists in September 2005. It focused on important issues including potential allergenicity and toxicity of GM foods; consumer acceptance; labelling and traceability. The conference was attended by 150 stakeholders drawn from government, scientists, industry, NGOs, etc.

- A Consultation on food derived from GM crops was organized to discuss Codex Alimentarius guidelines for the conduct of food safety assessment of foods derived from rDNA plants with group discussion focusing on key aspects, i.e., molecular characterization, nutritional assessment, toxicity and allergenicity and public awareness. This consultation played a key role in apprising the experts about developments in Codex and harmonizing GM food safety assessment in India with international developments.
- Series of four technical workshops of two days each were organized to introduce regulators and scientists on safety assessment of foods derived from GM crops. About 150 scientists from public sector institutions and regulators participated in these workshops. These workshops were followed by more intensive, hands-on training in four regional workshops in 2006 and 2007. Well known, international experts from U.S.A., Canada and the Philippines, who were highly experienced in GM food safety assessments, conducted these workshops in the week long programmes. The workshops focused on the interdisciplinary nature of GM food safety assessment and the participants, worked in teams that included toxicologists, allergists, plant breeders and nutritionists. Over 80 participants attended this series of workshops.
- A policy dialogue was organized by IFPRI and Research and Information System for Development Countries (RIS) in New Delhi in 2006 with an objective to provide a platform for national and international economic experts

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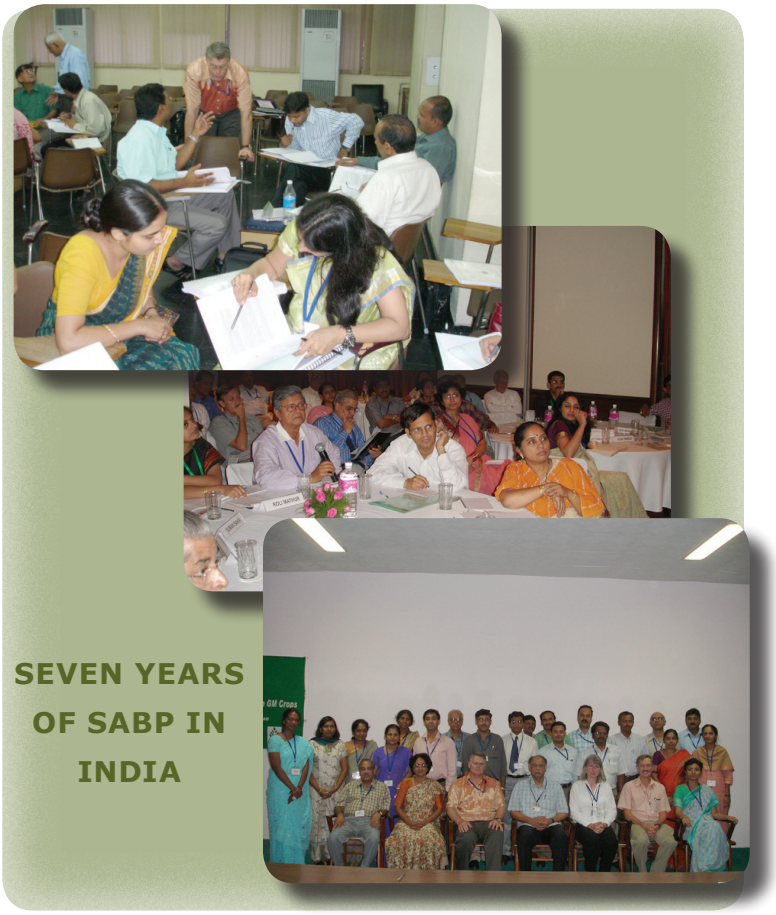
and important Indian stakeholders to discuss economic considerations related to biosafety and biotechnology in India.

- An economic assessment study of potential effects of mandatory GM labeling in India was conducted by experts from Indian Statistical Institute and Jawaharlal Nehru University with the support from SABP.
- A series of five state level "Train the Trainer Workshops" were conducted for extension personnel, NGOs and farm leaders for strengthening agricultural extension services' understanding of issues around GM crop regulation and safety assessment.
- A half-day seminar on "Biotechnology and Better Nutrition" was conducted by Nutrition Society of India with support from SABP. The seminar was attended by over 700 participants.



- In 2009, a delegation of nine scientists from India took part in SABP's "Confined Field Trial Training Workshop" in USA. The objective of the workshop was to provide field level training to SAU and other public sector scientists by facilitating interaction with the monitoring officers as well as officers involved in the conduct of the field trials of GM crops from both public and private sector in USA.
- A Review of International Approaches was undertaken as part of SABP activities to provide an insight into key operational issues of biotechnology regulatory systems of various countries viz. Australia, Argentina, Canada, Japan, South Africa, the United States and India.
- In addition to the above activities, to improve awareness about the regulation and safety assessment of GE cotton in India, SABP has supported the preparation Bt cotton video entitled "The Story of Bt cotton" in association with ISAAA. The video has been translated in seven local languages and widely distributed to reach grass root level workers.
- A monthly newsletter covering project activities as well as other important developments is prepared and circulated widely with a purpose to disseminate news of SABP, new developments with respect to biosafety, information on various websites and reports. Several experts have contributed guest articles to the newsletter over the years.

SAFETY ASSESSMENT OF GE FOODS: CONTRIBUTION BY ICMR

Dr. Vasantha Muthuswamy, Senior Deputy Director General (Retd.), ICMR, New Delhi, Email: vmuthuswamy@hotmail.com

Bt cotton, the first genetically engineered (GE) crop was approved in India in 2002. Subsequent research and development has progressed towards many other food crops such as brinjal, okra, rice, mustard, etc. With concerns about the potential impact of GE crops on human health, the Indian Council of Medical Research (ICMR) felt the need for structured guidelines to be in place for strengthening and streamlining the testing process for addressing the safety concerns of the foods derived from GE crops.

In association with South Asia Biosafety Programme (SABP), an "International Conference on Foods Derived from Genetically Modified Crops: Issues for Consumers, Regulators and Scientists" was organized in 2005 at New Delhi followed by a series of technical capacity building workshops in different parts of the country. These technical workshops were designed to provide in-depth, hands-on training about key requirements for the safety assessment including methodologies used to evaluate the potential toxicity and allergenicity of novel proteins, and the nutritional analysis of GE foods. The participants were tasked with taking on the role of a risk assessor to evaluate information and data for a number of experimental and commercialized GE foods. These capacity building initiatives provided support to ICMR in creating a pool of experts familiar with the issues and taking forward the process of preparation of GE food safety guidelines

ICMR developed the "Guidelines for safety assessment of foods derived from GE plants" in 2007, steered by an Expert Committee set up for the purpose and a consultative process by placing on the website for comments and seeking comments by circulation. The guidelines are based on Principles and Guideline developed under the aegis of Codex Alimentarious. These guidelines were adopted by Review Committee on Genetic Manipulation (RCGM) in DBT and Genetic Engineering Approval Committee (GEAC) in MoEF after following due process of review by the members. The DBT has also prepared the companion protocols to be used by the product developers along with the guidelines. Presently the guidelines and protocols are the reference document to be used by the developers and the reviewers for safety assessment of foods derived from GE crops in India

MANAGEMENT AND MONITORING OF CONFINED FIELD TRIALS OF GE CROPS

Dr. O.P. Govila, Former Professor of Genetics, Indian Agricultural Research Institute, New Delhi, Email: govilaop@gmail.com

Field trials are an important component of the development process of genetically engineered (GE) crops. Being associated with the monitoring of field trials of Bt cotton right

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CALENDAR OF EVENTS

Event	Organized by	Date and Venue	Website
INDIA			
South Asia Conference on Current Approaches to the Environmental Risk Assessment of Genetically Engineered Crops	Center for Environmental Risk Assessment, ILSI Research Foundation; Biotech Consortium India Limited (BCIL) in association with Department of Biotechnology and the Ministry of Environment and Forests, Government of India	May 16 - 18, 2011 New Delhi	http://cera-gmc.org/index.php?action=news&id=202
Stakeholder's Interface on GM Food Crops	Asia-Pacific Consortium on Agricultural Biotechnology and Trust for Advancement of Agricultural Sciences and National Seed Association of India	May 19, 2011 New Delhi	http://www.apcoab.org/uploads/concept%20note_GMFCrops.pdf
Training Workshop on Role of Risk Analysis in the Development and Implementation of Food Safety Programmes and Standards	BCIL in collaboration with University of Nebraska-Lincoln and University of Maryland	June 20 - 22, 2011 Hyderabad	
National Symposium Innovative and modern Technologies for Agricultural Productivity, Food Security and Environmental Management	Society for Applied Biotechnology	July 22 - 23, 2011 Mangalore, Karnataka	http://www.sabt.org.in/conferences.htm
TERI-ITEC Courses 2011-12 Course II - Applications of biotechnology and its regulation	The Energy and Resources Institute (TERI)	July 25–August 12, 2011 Gurgaon	http://www.teriin.org/index.php?option=com_events&task=details&sid=382
World Cotton Research Conference	International Cotton Advisory Committee and Indian Society for Crop Improvement under the aegis of Indian Council of Agricultural Research	November 7 - 11, 2011 Mumbai	http://www.wcrc-5.com/WCRC5_Circular.pdf
National Conference on Recent Advances in Plant Sciences	P.G. Department of Botany, Dharm Samaj College, Aligarh	October 15 - 16, 2011 Aligarh, Uttar Pradesh	https://docs.google.com/document/pub?id=1FJjEInqt_gMcnRtoxZnKc-SyR4AWfwaYJQ7lInfcC4lQ
8th International Safflower Conference: Safflower Research and Development in the World - Status and Strategies	Indian Society of Oilseeds Research and Indian Council of Agricultural Research	January 19 - 23, 2012 Hyderabad	http://www.dor-icar.org.in/downloads/Conference1.pdf
INTERNATIONAL			
South East Asia Conference on Current Approaches to the Environmental Risk Assessment of Genetically Engineered Crops	Center for Environmental Risk Assessment, ILSI Research Foundation; ISLI South East Asia Region; Ministry of Natural Resources and Environment, Government of Vietnam	June 27 - 29, 2011 Hanoi, Vietnam	http://cera-gmc.org/index.php?action=news&id=203
Biosafety, Biosecurity, & Biodefence (BioSSD) 2011 International Congress on Asia Pacific's Practices, Challenges, and Strategies	PROTEMP Conferences and beta congress (Germany) in collaboration with the Malaysian government agencies	July 18 – 20, 2011 Putra World Trade Center, Kuala Lumpur, Malaysia	http://www.biossdcongress.com/
Biosafety: An International Short Course in Environmental Aspects of Agricultural Biotechnology	Michigan State University Institute of International Agriculture in collaboration with the Plant Breeding and Genetics program	July 31 – August 5, 2011 Michigan, USA	http://worldtap.msu.edu/short-courses/biosafety/
First International Workshop on the Food and Environmental Safety Assessment of Genetically Modified Animals	Argentine Ministry of Agriculture, Livestock and Fisheries, (SAGyP, Biotechnology Directorate); ICGEB; United Nations University Biotechnology Programme for Latin America and the Caribbean (UNU-BIOLAC) and International Life Sciences Institute (ILSI Argentina)	September 5 - 9, 2011 Buenos Aires, Argentina	http://www.agrobiotecnologia.gov.ar/gmanimal2011/
Biosafety Workshop "Problem Formulation: A Strategic Approach to Risk Assessment of GMOs	International Centre for Genetic Engineering and Biotechnology (Trieste)	September 19 - 23, 2011 Trieste, Italy	http://www.icgeb.org/tl_files/Meetings/2011/ICGEB%20TS%20BSF%2019_23%20September%202011.pdf
VII Brazilian Biosafety Congress	National Biosafety Association-ANBio	September 19 - 23, 2011 Joinville/SC, Brazil	http://www.anbio.org.br/
5th International Botanical Conference -- Climate Change and Biodiversity: Role of Plant Scientists	Bangladesh Botanical Society	December 09 – 11, 2011 Department of Botany, University of Dhaka, Bangladesh	www.bdbotsoc.org or http://www.dhakai.com/botany/Circular.pdf

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from the beginning, it was heartening to be associated with capacity building activities undertaken in effective management and monitoring of such trials. The preparation of structured guidelines and standard operating procedures by DBT and MoEF was a significant step towards streamlining the conduct of trials.

Inputs provided under SABP with respect to international guidelines and procedures followed in other countries with functional regulatory systems provided an oversight for how rigorously the compliance of such guidelines and procedures is ensured. India has utilized the experiences of other countries with longer histories of regulating GE crops and combined these experiences and regulations into developing highly useful guidance for the conduct of field trials with GE crops.

SABP's confined field trial (CFT) training programme, involving visits to ongoing trials in USA, interaction with concerned officials and learning online CFT compliance programme, provided deep understanding of CFT and real procedures to be followed for conducting and monitoring of CFTs. The experts trained through such programme have played a key role in organizing capacity building activities in the agricultural research institutions

BAS-USDA ENDOWMENT SUPPORTS RESEARCH AGRICULTURE AND LIFE SCIENCE PROJECT

Prof. Dr. Naiyyum Choudhury, Secretary, Bangladesh Academy of Sciences (BAS)

The Bangladesh Academy of Science (BAS), established in 1973, is the leading scientific organization in Bangladesh and represents its scientific community internationally. The Academy presently has over 50 Bangladesh scientists as Fellows. Many distinguished Bangladeshi and international scientists, including Nobel Laureates, have settled abroad as expatriate and foreign Fellows. Fellows have been involved in the formulation of such national policies as science and technology, biotechnology and biosafety guidelines. The Academy organized the first international seminar on biotechnology in 1986 and has made strong recommendations to the government to strengthen biotechnology research and development.

One of the major objectives of BAS is to promote research in pure and applied sciences and their practical application to the problems of Bangladesh's national welfare. To that end it provides grants, scholarships and fellowships for approved scientific research and awards prizes and medals for outstanding scientific work.

BAS-USDA PROGRAMME IN AGRICULTURAL AND LIFE SCIENCES (PALS)

In May 2009, under an agreement with the government of Bangladesh, the United States Department of Agriculture (USDA) created an endowment, the BAS-USDA Programme in Agricultural and Life Sciences (PALS), to promote and support applied agricultural and biological sciences research and development activities that mutual benefit Bangladesh and the US. The goal of the programme is to focus on food security, poverty alleviation and promoting broad based equitable and sustainable agriculture. Through a Board of Trustees, BAS is responsible for implementing programmes, administering the fund and project selection.

Total funds disbursed in three years (2010 – 2013) will be Tk.1620.01345 lakh for 38 approved projects at 11 universities, 3 institutes and 2 NGOs. Project lists and information on the programme are available at the BAS website www.bas.org.bd.

BANGLADESH - INSTITUTIONAL BIOSAFETY COMMITTEES FORMED

As set out in the Biosafety Guidelines of Bangladesh, Institutional Biosafety Committees (IBC) have been constituted at the following two universities:

NAME	DEPARTMENT	POSITION
DHAKA UNIVERSITY		
Prof. Dr. R.H. Sarker	Botany	Chairperson
Prof. Dr. Z.I. Seraj	Biochemistry and Molecular Biology	Member
Prof. Dr. M.A. Hossain	Microbiology	Member
Dr. A.A. Akhonda	Genetic Engineering and Biotechnology	Member
Prof. Dr. A. Bshar	Zoology	Member
Prof. Dr. M.I. Hoque	Botany	Biosafety Officer
Prof. Dr. S. Akhteruzzaman	Biochemistry and Molecular Biology	Biosafety Officer
Prof. Dr. C.R. Ahsan	Microbiology	Biosafety Officer
Dr. N. Ahsan	Genetic Engineering and Biotechnology	Biosafety Officer
Mrs. J. Ferdous	Zoology	Biosafety Officer
BRAC UNIVERSITY		
Prof. Dr. N. Choudhury	Coordinator, Biotechnology	Chairperson
Dr. M. Hossain	Math and Natural Sciences (MNS)	Member
Ms. F. Ahmed	MNS	Member
Mr. M.R. Hossain	MNS	Member

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