

# South Asia Biosafety Program

**NEWSLETTER** for private circulation only – not for sale



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## NEW SPEAKERS ANNOUNCED

Register today for the 3<sup>rd</sup> Annual South Asia Biosafety Conference  
September 19-20, 2015 in Dhaka, Bangladesh

This conference provides an opportunity to hear from leading scientists representing regulatory agencies, public sector research institutions, and the private sector in South Asia and internationally. Sessions include:

- Regulation of Biotechnology in South Asia
- What are Nutritionally Enhanced Crops, and Why Does the World Need Them?
- Safety Assessment for the Golden Rice Project
- Nutritionally Enhanced Rice
- Biofortified Sorghum
- Crop Improvement to Address Environmental Stress
- Late-Blight Resistant Potato for Bangladesh
- Development of Biotechnology in Pakistan
- Traits for Climate Change Adaptation
- Introduction to Preparing a Regulatory Dossier: Principles
- Interpreting Regulatory Requirements: Knowing When Data is Not Necessary
- Regulatory Testing Versus Research Experiment: Why the Data for Your Dossier is Different Than Your Thesis Research
- Challenges for Developing a Regulatory Dossier from Public Sector Developers in Developing Countries
- Education and Outreach to Farmers in Developing Countries: Lessons for Stewardship and Monitoring of Biotech Crops
- Post Release Monitoring of Bt Brinjal
- Stewardship for Off-Patent Technologies
- Design of Monitoring Studies for GE Crops
- What is Harmonization, and Why Does it Matter?
- Fostering Harmonization through Development and Capacity Building
- Harmonization through Information Exchange: OECD's Work on Low Level Presence
- Harmonization through Recognition of Decisions: Vietnamese Experience
- The Bilateral Agreement on Biotech Between Canada and the United States



For more information, please visit the conference website at <http://sabc.biotech.co.in/> or see pages 5-6.

## Feedback Received on the Biosafety Policy, Monitoring and Enforcement Manuals through the Implementation of the National Biosafety Framework Project

MR. MOHAMMED SOLAIMAN HAIDER, DEPUTY DIRECTOR, DEPARTMENT OF ENVIRONMENT, & PROJECT DIRECTOR, INBF PROJECT, AGARGAON, DHAKA



As a party to the Cartagena Protocol on Biosafety to the Convention on Biological Diversity, Bangladesh is committed to develop and implement biosafety regulatory regimes. A National Biosafety Framework was developed with technical assistance from the United Nations Environment Programme's Division of Global Environment Facility Coordination (UNEP-GEF). The Department of Environment (DoE), under the Ministry of Environment and Forests (National Competent Authority), is the executing agency responsible for the operations of the Implementation of the National Biosafety Framework Project (INBF) and receives on-going technical assistance from UNEP-GEF.

The INBF project will pave the way to institutionalize the biosafety regulations and strengthen infrastructural facilities for risk assessment and management of GMOs. The overall objective of the project is to implement the National Biosafety Framework in compliance with the Cartagena Protocol on Biosafety through enhancing the existing capacity on biosafety at the institutional and individual levels. It will also provide global environmental benefits on the safe use of modern biotechnology and conservation of the uniqueness of Bangladesh's biodiversity. It will address national needs and priorities on the conservation of biological diversity and protecting human health.

Substantial progress has been made towards achieving the objectives of this project. A draft of the biosafety policy for Bangladesh and a monitoring and enforcement manual have been developed.

**Substantial progress has been made towards achieving the objectives of the Implementation of the National Biosafety Framework Project (INBF)**

Documents on biosafety rules 2012 and biosafety guidelines 2007 have been updated. Printed materials for biosafety education and awareness have been translated into English. Two workshops were held to finalize these documents. The first consultation workshop was held at the LEGD Bhaban, Agargaon, Dhaka and the second consultation workshop was held at the Chameli Conference room of the DoE. Dr. Kamal Uddin Ahmed, Hon'ble Secretary, Ministry of Environment and Forests (MOEF), graced the inaugural ceremony as the Chief Guest. Mr. Raisul Alam Mondal, Hon'ble Director General, Department of Environment (DoE), chaired the inaugural ceremony of both the workshops.

Approximately 150 participants attended the workshops, representing MOEF, DoE, the Ministry of Agriculture, the Ministry of Commerce, the Ministry of Industries, the Ministry of Fisheries and Livestock, the Bangladesh Agricultural Research Council (BARC), NARS Research Institutes like BARI, BRRI, BSRI, the Cotton Development Board, the National Institute of Biotechnology, the Center of Medical Biotechnology, public and private universities, and participants from NGOs and private Agri-business companies.

During the workshops, the Project Director presented the drafted biosafety documents and sought suggestions and modifications on them. Constructive feedback was received and will be incorporated as appropriate during the revision process of the documents.





## Food Security, Climate Change and Biotechnology: A Look at Bangladesh

MR. MARCUS GLASSMAN, RESEARCH ASSOCIATE, GLOBAL AGRICULTURE & FOOD, THE CHICAGO COUNCIL ON GLOBAL AFFAIRS

REPRODUCED FROM THE *GLOBAL FOOD FOR THOUGHT* BLOG, THE CHICAGO COUNCIL ON GLOBAL AFFAIRS, ORIGINALLY PUBLISHED ON JULY 28, 2015

In the US and around the world, future food security is a constant concern. By 2050, an estimated nine billion people will need to be fed and the food to feed them must come from somewhere on our already crowded planet. Complicating the problem of scale is another, arguably larger, challenge: How does agriculture continue to produce at current rates, much less increasing rates, in the face of climate change? Many look to biotechnology for answers.

For a microcosm of the challenges facing agriculture in a hotter, more crowded world, look no further than Bangladesh. Bangladesh is a country approximately the size of Iowa with a population density roughly 33 times greater than the US and physical territory dominated by low-lying river delta and coastal lands. The impacts of climate change are all amplified here: Rising sea levels degrade low-lying coastal lands and drive saline water further upriver and inland into irrigation canals and ground water; agriculture is dependent on seasonal rains, where heavy monsoons can flood out fields and late or lacking monsoons mean drought and crop failure; and increasing temperatures in the already tropical climate mean crops are more susceptible than almost anywhere else to heat stress and crop decline.

These challenges are real, current, and worsening. But in Bangladesh, the US, and around the world, plant scientists are using biotechnology to solve them.

Flooding is arguably Bangladesh's greatest agricultural threat. Rice provides approximately 70 percent of the calories consumed by the average Bangladeshi; although rice grows partially submerged in paddies, most rice varieties—especially those farmers favor—cannot survive for more than a few days fully submerged. In India and Bangladesh alone, flooding destroys four million tons of rice annually, enough to feed 30 million people.

But there are rice varieties not favored by farmers—low yielding and unprofitable to grow—that can survive flooding. A variety from Orissa, India, can survive for two weeks fully submerged, but despite attempts since the 1950s to cross-breed the Orissa rice's flood-tolerance into commercially viable rice strains, results were uniformly underwhelming: The rice genome is complex, and moving just one trait from one variety to another is nearly impossible. However, in the 1990s, scientists at UC Davis, funded by USDA grants, identified the gene in the Orissa variety responsible for its flood-tolerance. Using genetic engineering (GE), they moved the selected gene into the genome of commercially favored rice varieties, and the result was a rice plant that produced grain at commercial volume, but could survive two weeks of flooding. This GE rice is not currently grown commercially, but does illustrate the potential for the technology.

Genetic engineering is not the only biotechnology solution to climate change problems. Marker assisted plant breeding, for example, couples genetic sequencing technology with traditional breeding techniques to solve the kind of problems that plagued early attempts to cross-breed Orissa rice. In marker assisted breeding, the genome of two plants with separate desired traits—for example, a commercial rice plant with high grain yields, and a flood-tolerant Orissa rice plant—are sequenced. Then, the two plants are crossbred through natural plant breeding techniques. The non-GE, non-biotech offspring of that crossbreeding contain any number of traits from either parent plant. Plant breeders then sequence the genomes of those offspring plants, and identify exactly which plants inherited the traits they wanted—and those are the handful of plants used to develop new varieties. Using traditional breeding alone, this process would take years if not

decades, but with the assistance of biotechnology, desired results can be achieved in just a handful of plant generations. Using marker assisted plant breeding, researchers at the International Rice Research Institute (IRRI) in the Philippines have successfully crossbred rice varieties that combine commercial grain yields and Orissa rice's flood tolerance, and have distributed those non-GE seeds to more than four million farmers across Asia.

At IRRI, research into marker assisted breeding is underway to create rice varieties that can tolerate high-salt environments, extreme heat and cold, drought, and poor quality soils. The approach is still new, and the results have largely yet to reach scale—but the need for such rice varieties hardly needs explanation. In Bangladesh alone, 2.4 million acres of potential farmland lies fallow due to high salinity, a problem only worsening as sea levels rise. Desired traits and technologies can be combined, too; for example, a rice variety bred to contain marker assisted breeding-derived salt tolerance and GE flood tolerance could help farmers reclaim those flood prone, salt-contaminated farmlands left fallow as sea levels have risen. The possibilities are enormous.

Adapting agriculture to a changing climate is just a start: Biotechnology can actually help to reduce agriculture's contribution to global warming altogether. Growing rice is a leading source of methane, a greenhouse gas 84-times stronger than carbon dioxide. Rice agriculture produces between 25-100 million metric tons of methane annually; this methane comes from bacteria that feed off the carbohydrates in the rice plants' roots in the oxygen-free soils of rice paddies. But just recently, scientists in Sweden, China, and the US have successfully inserted a gene from a barley plant into that of a rice genome, causing the plant to spend more energy growing a carbohydrate-rich stalk at the expense of its roots, which become comparatively small and underdeveloped. This small change to the rice plant causes as much as a 90 percent reduction in methane production from rice paddies, a significant reduction in rice agriculture's greenhouse gas footprint.

It's said that if crops don't adapt to climate change, neither will agriculture, and neither will we. But whereas resource-rich countries like the US have the luxury to debate which solutions they will eventually adopt, countries like Bangladesh, for whom climate change is a real and current disaster, solutions are needed today. Biotechnology—genetic engineering and otherwise—offers the greatest opportunity we have to reverse the agricultural losses climate change has already inflicted, and our greatest chance to create an agricultural system with the resistance needed to feed ourselves in a hotter, more peopled future. Biotechnology's role in agriculture is at times controversial, but there is no denying that it is absolutely necessary to approach climate change with all tools at our disposal.

*See the original publication at <http://bit.ly/1MIgNro>*

### We want to hear from you!

The SABP Newsletter is distributed to regulators, scientists, policy makers and other stakeholders interested in agricultural biotechnology in South Asia. Each edition includes invited editorials, information about biosafety regulation and policy developments in India, Bangladesh and Pakistan, SABP and other capacity building activities in the region, and related science or news stories. SABP is looking for your feedback on the newsletter to help improve future editions. We invite you to participate in the survey by going to [www.surveymonkey.com/s/SABPNews2015](http://www.surveymonkey.com/s/SABPNews2015)

EVENT	ORGANIZED BY	DATE	WEBSITE
<b>INDIA</b>			
National Workshop on Communicating Science & Biosafety	Ministry of Environment, Forest and Climate Change and the Indian Institute of Mass Communication (IIMC)	August 20-21, 2015 New Delhi	<a href="http://www.iimc.nic.in">www.iimc.nic.in</a>
AgriGenomics India	Select Biosciences Ltd.	August 20-21, 2015 Chandigarh	<a href="http://www.selectbiosciences.com/conferences/index.aspx?conf=AGI15&amp;se=india">www.selectbiosciences.com/conferences/index.aspx?conf=AGI15&amp;se=india</a>
Advanced Training Course on Recent Advances in Improvement of Vegetable Crops	Dr. YS Parmar University of Horticulture & Forestry	September 2-22, 2015 Nauni-Solan (HP)	<a href="http://www.yspuniversity.ac.in/trainings/caft-2015.pdf">www.yspuniversity.ac.in/trainings/caft-2015.pdf</a>
Summer Course on Novel Genomic Tools and Modern Breeding Approaches for Enhancing Productivity and Nutritional Quality of Pulse Crops	Indian Institute of Pulses Research, Indian Council of Agricultural Research	September 5-25, 2015 Kanpur	<a href="http://www.iipr.res.in/pdf/school_200515.pdf">www.iipr.res.in/pdf/school_200515.pdf</a>
6 <sup>th</sup> World Congress on Biotechnology	OMICS International	October 5-7, 2015 New Delhi	<a href="http://www.biotechnologycongress.com/india/index.php">www.biotechnologycongress.com/india/index.php</a>
25 <sup>th</sup> Asian-Pacific Weed Science Society Conference (APWSS 2015)	Indian Society of Weed Science, Indian Council of Agricultural Research, Directorate of Weed Research and Prof. Jayashankar Telangana State Agricultural University	October 13-16, 2015 Hyderabad	<a href="http://www.isws.org.in/25intro.aspx">www.isws.org.in/25intro.aspx</a>
<b>INTERNATIONAL</b>			
2015 International Symposium and Annual Meeting of the KSABC	Korean Society for Applied Biological Chemistry (KSABC)	August 17-19, 2015 Seoul National University, South Korea	<a href="http://www.ksabc.or.kr/english/symposium/symposium_2015.htm">www.ksabc.or.kr/english/symposium/symposium_2015.htm</a>
3 <sup>rd</sup> Annual South Asia Biosafety Conference	South Asia Biosafety Program (SABP)	September 19-20, 2015 Dhaka, Bangladesh	<a href="http://sabc.biotech.co.in">http://sabc.biotech.co.in</a>
Biosafety Workshop 2015: Scientific and Technical Approaches in GMO Decision-Making	International Centre for Genetic Engineering and Biotechnology (ICGEB) Biosafety Unit	October 19-23, 2015 Trieste, Italy	<a href="http://www.icgeb.org/trieste-biosafety-workshop-2015.html">www.icgeb.org/trieste-biosafety-workshop-2015.html</a>



**SOUTH ASIA**  
BIOSAFETY PROGRAM

**The South Asia Biosafety Program (SABP)** is an international developmental program implemented in India, Bangladesh and Pakistan with support from the United States Agency for International Development. SABP aims to work with national governmental agencies and other public sector partners 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.



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To receive an electronic copy of this newsletter send your name, institutional information and e-mail address to: [vibhaahuja.bcil@nic.in](mailto:vibhaahuja.bcil@nic.in)



# Registration Form

## 3<sup>rd</sup> Annual South Asia Biosafety Conference

September 19-20, 2015

BRAC Centre Inn, Dhaka, Bangladesh



SOUTH ASIA  
BIOSAFETY PROGRAM

Registrations are limited to 100 for the conference. Registrants that cannot be accommodated will be added to a waitlist, and notified if space becomes available.

Attach mailing label from brochure,  
or your business card.

Name Preferred on Badge \_\_\_\_\_

Complete the following if the information on the mailing label is incorrect or no label is provided.

Registrant is:

Gender            Male    Female

Title             Mr.     Mrs.    Ms.     Dr.

First Name \_\_\_\_\_

Middle Initial \_\_\_\_\_

Last/Surname \_\_\_\_\_

Job Title \_\_\_\_\_

Employer/Company/Institution \_\_\_\_\_

Address \_\_\_\_\_

Street \_\_\_\_\_

City \_\_\_\_\_

State/Province \_\_\_\_\_

Zip/Postal Code \_\_\_\_\_

Country \_\_\_\_\_

Telephone \_\_\_\_\_

Facsimile \_\_\_\_\_

E-mail \_\_\_\_\_

### Registration\*

Category	Fee	
	INR	US\$
Industry	Rs. 5,000/-	\$85
Research Institution Universities Individual experts	Rs. 3,000/-	\$50
Students	Rs. 2,000/-	\$35
BCIL Biotech Club Members	25% discount	
Additional delegates from same organization (except students)	25% discount	
Government departments and ministries	No fee up to two nominations and Rs. 2,000/- each for additional nomination	

\*In case you face difficulty in online registration, please download the registration form and send it to us along with payment through bank transfer. The details for Bank Transfer are as follows:

**Beneficiary Name: Biotech Consortium India Limited**

**Account Number : 00032320008527**

**IFSC Code : HDFC0000003 (HDFC Bank Limited)**

### Cancellation/Refund Policy

Registration cancellations must be made in writing and received by BCIL no later than September 1, 2015. Cancellations received by this date are subject to a 20% processing fee. Registration and ticketed event cancellations received after September 1, 2015, are NOT subject to a refund.

### Registration forms should be sent to:

Dr. Vibha Ahuja, Chief General Manager  
Biotech Consortium India Limited (BCIL)  
Anuvrat Bhawan, 5th Floor  
210, Deen Dayal Upadhyaya Marg  
New Delhi - 110 002  
Telephone Number +91-11-23219064-67 (Ext. 204; 205);  
23219059(D)  
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Email: vibhaahuja@biotech.co.in; vibhaahuja.bcil@nic.in

# Poster Program Abstract Submission Form

## 3<sup>rd</sup> Annual South Asia Biosafety Conference

September 19-20, 2015

BRAC Centre Inn, Dhaka, Bangladesh

**THE 3<sup>RD</sup> ANNUAL SOUTH ASIA BIOSAFETY CONFERENCE POSTER PROGRAM** is a new opportunity for individuals to share their research, findings and achievements with colleagues at the conference. Presenting a poster is a noteworthy way to share expertise or accomplishment, and poster presenters will have a dedicated time to present and discuss their work with the diverse group of attendees.

All poster abstracts must convey relevance to biosafety research, risk assessment, or regulation of genetically modified organisms (including programs or activities to improve capacity and knowledge generation).

The following are some suggestions about poster abstracts that will contribute to ensuring the readability and quality of the submission. Abstracts of accepted posters will be included as part of the conference onsite program and will be published as submitted, without content editing.

- Check for proper spelling and grammar.
- Use a standard typeface such as Times Roman with a font size of 12.
- Begin sentences with words (not numbers).
- Standard abbreviations may be used without definition, but nonstandard abbreviations/acronyms should be placed in parentheses after the first use of the terminology. It is important to keep nonstandard abbreviations/acronyms to a minimum, to allow for readability and understanding.
- Do not include tables, figures, or graphs in the abstract. Such content is appropriate for the poster.
- Limit the abstract to 300 words.
- Try to organize the abstract with the following headings where appropriate: purpose, methods, results, conclusions (e.g., for research projects) OR purpose, description, evaluation and outcomes (e.g., for capacity building projects).

Space is limited. Posters will be considered on a first come, first served basis, based on the relevance to the program.

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### ABSTRACT SUBMISSION FORM FOR POSTER PROGRAM

**PLEASE COMPLETE THE FORM BELOW AND E-MAIL IT TO [lwilliams@ilsa.org](mailto:lwilliams@ilsa.org) AND COPIED TO [vibhaahuja.bcil@nic.in](mailto:vibhaahuja.bcil@nic.in).**

You will receive a return email acknowledging receipt of your abstract and subsequently a second email informing you if your poster has been accepted for the conference poster program.

I. Lead Presenter

First Name: \_\_\_\_\_

Last Name: \_\_\_\_\_

Institution and Address: \_\_\_\_\_

E-mail: \_\_\_\_\_

Telephone Number: \_\_\_\_\_

(NOTE: Poster Presenters must register for the 3<sup>rd</sup> Annual South Asia Biosafety Conference. If an abstract is received from an author who is not registered, the abstract will NOT be included in the review process).

II. Poster Title: \_\_\_\_\_

Poster Authors: \_\_\_\_\_

(NOTE: list all poster authors including their name, organization, address and e-mail. Separate authors with a semi-colon and please INCLUDE the lead presenter also).

III. Poster Abstract (maximum 300 words)

\_\_\_\_\_  
\_\_\_\_\_