

South Asia Biosafety Program

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BANGLADESH

Perspective on the South Asia Biosafety Conference

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On September 15-16, 2014, the 2nd Annual South Asia Biosafety Conference was held at the Taj Sumadra Hotel in Colombo, Sri Lanka. Altogether 22 participants from public and private sectors including policy makers, academicians and researchers attended this conference from Bangladesh. The Bangladesh chapter discussed in detail their capacity and research activity in various fields of biotechnology, especially in adaptation to climate change. They shared their achievements in GM crop research and application of biosafety regulations. Scientists from India, Pakistan, the UK and Sri Lanka also shared their achievements in the agricultural field with respect to transgenic plants. An interesting and new plant technology to produce crops tailored to our requirements was discussed by Dr. Jeff Wolt from Iowa State University, USA. He acquainted the audience with novel approaches under the concept of genome editing. He talked about techniques like oligonucleotide-mediated mutagenesis, TALENS and CRISPRs. These are quite recent techniques, which may not need to go through the current regulatory process as it is only editing of the existing genome rather than introduction of foreign gene like the case of transformation. Research on these technologies are only taking place in the developed world but due to its enormous promise, regional workshops on these technologies should prove to be most useful.

“ In the ten year journey of the South Asia Biosafety Program in this region, the achievements in developing guidelines and regulations for biosafety has been quite a success.”

Speakers from Sri Lanka, Bangladesh, India and Pakistan explained their status on biosafety regulations in their respective countries. Interestingly, the trend of development of the regulations was found to be similar in these countries. Bhutan also shared their initiatives to develop regulations and biotechnology research platforms in their country. In the ten year journey of the South Asia Biosafety Program in this region, the achievements in developing guidelines and regulations for biosafety has been quite a success.

For fruitful development and outcome, however, it was felt that the harmonization of biosafety regulation is very important. Regional harmonization of risk assessment was elaborated by speakers from France, the Netherlands, Uganda and the United States of America. In the conference, it was acknowledged that Bangladesh is a good example of harmonized risk assessment and biosafety decision in the region. This is because the National Committee on Biosafety (NCB) of Bangladesh has approved the limited field release of fruit and shoot borer resistant *Bt* brinjal, taking into account the risk assessment data generated by India. The conference ended recognizing the need to do more harmonization of risk assessments for wider approval of GM crops following the example set by Bangladesh.

GET THE FACTS ON THE SOUTH ASIA BIOSAFETY CONFERENCE

179 people attended the two day conference in Colombo, Sri Lanka. Participants came from eleven countries, including India, Bangladesh, Pakistan, Sri Lanka, Bhutan, Uganda, Brazil, France, United Kingdom, the Netherlands and the United States.

Participants were surveyed after the conference to evaluate the impact. 100% of responders would recommend this conference to others. When asked for additional feedback on the conference, participants shared:

- "It was an ideal opportunity for researchers to find potential partners/ collaborators in their areas of interest."
- "The presenters brought into focus the latest biotechnological advancement in the agricultural produce of one or another kind. Superior extant knowledge and data of clarity were the hallmarks of these presentations."
- "Informative, covering a wide range of perspectives and progress in the respective countries."
- "It was a good effort at bringing together stakeholders from different countries of the region."
- "The session on regional harmonization of risk assessment approaches in agricultural biotechnology was the most valuable aspect of the conference because most of the South Asian countries have the same kind of biosafety issues."
- "Good mix of science and practical problems and approaches, e.g., regulations. The workshop on harmonization was a very good opportunity for intensive exchange of thoughts."
- "The conference offered a platform to engage with researchers from the neighboring region which helped in bringing a better and cohesive understanding of the common challenges in the area of biosafety."
- "This kind of conference should continue in the future."

INDIA

International Exposure to GM Research

DR. V. SATYAVATHI, BIO CARE SCIENTIST, CENTRE FOR DNA FINGERPRINTING AND DIAGNOSTICS (CDFD), HYDERABAD

All of the speakers of the two day South Asia Biosafety Conference immensely captured the hearts of the audience. The most significant thing the conference focused on was the global sense of perspective on biosafety issues. Biosafety involving risk assessment is evolving into an emerging branch of science with a vast number of protocols, guidelines, and databases, varying from country to country and species to species. This conference has given a take home lesson on clarifying the regulations of the genetically modified organisms, the importance of social media, the impact of climate change, and the regional harmonization of risk assessment approaches. I thoroughly enjoyed all the sessions. The discussion with speakers at the end of every session was the most interesting and exhilarating experience.

On the first day after the talks, the poster program provided an excellent opportunity for me to exhibit my research on baculovirus resistant transgenic silkworms and share with other scientists their expertise. This is very useful in light of our plan to assess the efficacy of transgenes and also formulate regulatory guidelines for the commercial scale release of transgenic silkworms. By attending the conference, I have benefited by getting exposure to international issues pertaining to research on other GM insects. This knowledge will be helpful in planning and designing experiments related to environmental risk assessment of non-target organisms. After attending the conference, my challenges seem no longer unique and I am sure everyone working



The presentations
from the 2nd Annual
South Asia Biosafety
Conference which was
convened in Sri Lanka,
from September 15-16,
2014, are now available on
the CERA website.

Please visit:

[http://cera-gmc.org/ERA_
Conference_Colombo2014](http://cera-gmc.org/ERA_Conference_Colombo2014)

in this field has found "the foot prints" of brothers who had faced similar dilemmas.

I strongly feel that the conference was a well organized event with effective management of time. This conference, organized by the Biotech Consortium India Limited under the aegis of the South Asia Biosafety Program, the Ministry of Environment and Renewable Energy, the Government of Sri Lanka, the National Science Foundation, the Coordinating Secretariat for Science, Technology and Innovation, the Bangladesh Academy of Sciences and the Pakistan Academy of Sciences, holds great promise not only to the scientists of South Asian countries but to all those working in the fields of transgenics, science communication and biosafety across the globe.

The amity, camaraderie and warmth I experienced at the conference helped invigorate my interest and excitement in this field. I feel lucky to have attended the conference which helped me to expand my professional network. I had the great opportunity to meet scientists from neighboring countries as well. I am grateful to Dr. Vibha Ajuha, the cool and vibrant person behind the event, for organizing such an awesome event and for giving me an opportunity to participate. The knowledge, connections and perspective will surely instigate the right thoughts, collaborations and perception. With this same enthusiasm, I am looking forward to attending the conference next year in Dhaka.



Forum for Sharing Challenges and Opportunities about Biosafety

DR. GITA BAMEZAI, HEAD, DEPARTMENT OF COMMUNICATION RESEARCH, INDIAN INSTITUTE OF MASS COMMUNICATION, JNU CAMPUS, ARUNA ASIF ALI ROAD, NEW DELHI

The South Asia Biosafety Conference was an opportunity to meet people from diverse backgrounds and regions and to listen to contributions made by each country in the region. The conference was an interesting conclave of scientists, scholars and media practitioners, policy makers and regulators who provided myriad perspectives about biosafety practices, advances in research, regulation issues and policy perspectives. From individual scientists and scholars working in the area to policy makers and media practitioners, all participants spoke with passion and fervor about the need to take the biosafety program to a new level of acceptance.

This was one of the few forums where people from the same region had the occasion to share challenges and opportunities in

pursuing research. The presence of women scientists and presenters from the South Asian region at the conference was indicative of a new surge in number of women scientists and their interesting work in biotechnology and biosafety research.

Such regional conferences are of great importance in providing alternative spaces for discussion on biosafety issues specific to countries of the region. Regional initiatives like this conference can also spur scientific endeavors among the young scientific community. Sessions devoted to interdisciplinary research related to consumers and users perspectives can provide a more comprehensive approach to the biosafety program in the region.



Helpful Knowledge Received for Planning and Designing Future Experiments

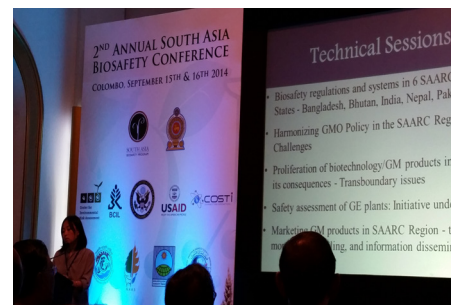
DR. S.V. SAWARDEKAR, ASSOCIATE PROFESSOR, PLANT BIOTECHNOLOGY CENTRE, DR. B.S. KONKAN KRISHI VIDYAPEETH, DAPOLI

The 2nd South Asia Biosafety Conference was very useful to my work in Maharashtra, India, as I plan to initiate work on *Bt* rice and its effect on the environment. I feel both professionally and personally that the conference was a well organized event with effective management of time.

By attending the conference, I benefited by getting exposed to

international issues pertaining to biosafety. This will certainly help me in improving and prioritizing our research in GM crops.

The conference speakers were top notch. Their passion in what they presented was inspiring! The knowledge gained from my participation in this conference will be helpful in planning and designing experiments related to biosafety of GM crops and their commercialization.



Significant and Timely Conference for the Region

PROBODH BORAH, PROFESSOR & HEAD, DEPARTMENT OF ANIMAL BIOTECHNOLOGY, COLLEGE OF VETERINARY SCIENCE, ASSAM AGRICULTURAL UNIVERSITY, KHANAPARA, GUWAHATI

Biotechnology offers the potential for revolutionizing our approaches towards finding new drugs, new therapies and new ways of controlling diseases. Application of biotechnology for production of new high-yielding varieties of crops, and those resistant to diseases and pests as well as to inclement climatic conditions unfavorable to crop growth, are revolutionizing agriculture.

In spite of the tremendous potential of biotechnology to provide innovative solutions to many problems in the areas of agriculture, healthcare, animal production, etc., some biotechnology applications have significant social and environmental implications. Serious concerns have been raised in regards to safety and possible long-term adverse impact of applications of biotechnological innovations, such as genetically modified organisms (GMOs) and their safe containment, and in particular how to assess the medium-term effects of GMOs on natural systems, contain and control the dispersal of microorganisms, develop and apply national laws and international standards.

The Cartagena Protocol on Biosafety reflects growing public concerns about the potential risks of biotechnology and GMOs, including genetically altered food crops. The Protocol aims at protecting biological diversity from the potential risks posed by an inadvertent introduction of genetically modified organisms resulting

from application of modern biotechnological principles. However, unlike the leading advanced countries, all the developing countries of South Asia region are yet to enact the necessary biosafety regulations to ensure safety and security to the end-users of such technologies as well as to avoid potential risk to the environment from use of products of modern biotechnology.

In view of the above backdrop, the 2nd Annual South Asia Biosafety Conference held recently on September 15-16, 2014 in Colombo, Sri Lanka was very significant and timely. It was really a very gratifying learning experience for me to have the opportunity to attend the conference as an Indian delegate. The conference provided us a platform to learn about the current status of research works in the South Asian Association for Regional Cooperation (SAARC) countries in the area of application of modern biotechnology in crop science and animal production. In addition, the status of enacting biosafety regulations in these countries and the possibility of harmonization of such efforts among them were also discussed during the conference. It was revealed from the deliberations and interactions that all the SAARC countries are yet to adopt and practice strict biosafety regulations to tide over the potential risk of introduction of GMO food crops, although some of these countries have already made much progress in research in the relevant field.

Valuable Inputs and Encouragements Gained

S.K.BALASHANMUGAM, DOCTORAL STUDENT, RAJIV GANDHI SCHOOL OF INTELLECTUAL PROPERTY LAW, INDIAN INSTITUTE OF TECHNOLOGY, KHARAGPUR, WEST BENGAL

I am a doctoral student from the Indian Institute of Technology, Kharagpur, West Bengal, India. I started my legal research career in 2013. I had participated in the 1st Annual South Asia Biosafety Program organized in New Delhi last year. During that conference, I was very impressed and developed a lot of interest to work on the GM policy and regulations. I had a deep curiosity to attend the South Asia Biosafety Conference held in Colombo, Sri Lanka, this year.

The two day conference provided me a lot of information related to the research, development and commercialization aspects of GM crops

that I am currently researching. It also provided me useful information related to the risk assessment and regulations of GMOs. The plenary sessions and parallel sessions clarified a lot of doubts which were lingering in my mind during my research study.

During my poster presentation, I received valuable inputs and encouragements from numerous people, including the head of the Indian Institute of Mass Communication, an eminent economist and a professor from the University of Agriculture, Faisalabad in Pakistan. The hospitality during the conference was amazing.

Paving the Way for Future Collaboration

DR. BUSHRA MIRZA, PROFESSOR & CHAIRPERSON, DEPARTMENT OF BIOCHEMISTRY, QUAID-I-AZAM UNIVERSITY, ISLAMABAD



The 2nd Annual South Asia Biosafety Conference was held for the scientists, regulators and policy makers of the region involved in the risk assessment and regulation of genetically modified organisms. The Center for Environmental Risk Assessment (CERA) organized an exclusive pre-conference meeting for the participants from Pakistan on September 14, 2014. This event was attended by twenty participants from Pakistan including awardees of the Biosafety Research in Pakistan Grant Program (BRPGP), representatives of the relevant regulatory agency and the focal person of the BRPGP.

The main objective of this pre-conference meeting was to discuss the projects funded by BRPGP. The event was organized as a full day research report workshop in which principal investigators of the projects funded in 2012 and 2013 presented progress reports on their research work. Each presentation was followed by an interesting question and answer session. It was an excellent opportunity for the participants to learn from each other's experiences. Everyone actively participated in the discussions. The presence of the experts like Professor Jeff Wolt of Iowa State University, USA, Professor Hans Bergmans of RIVM (retired), Netherlands and Professor Alan Gray of

the Centre for Ecology and Hydrology, United Kingdom, made the workshop highly productive.

The BRPGP workshop was followed by the South Asia Biosafety Conference for the next two days. Delegates from several countries of South Asia joined the event. The conference proved to be a wonderful learning experience for the participants about the state of biotech research and the relevant regulatory measures taken in the countries of the region. It also paved the way for the future collaboration between the experts who hold common interests.

The conference and the workshop were both well organized and highly informative. All of the participants acknowledged the commitment of CERA to support biosafety research in Pakistan. The decision to jointly organize the BRPGP workshop with the South Asia Biosafety Conference was highly appreciated as it provided an additional opportunity for the researchers and regulators from Pakistan to meet their counterparts in neighboring countries.

This initiative taken by CERA will have a long lasting impact on the training of manpower and capacity building for research and regulation of genetically modified plants in Pakistan.

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To view the research updates presented at the BRPGP workshop, please visit http://cera-gmc.org/BRPGP_Workshop_Colombo2014

EVENT	ORGANIZED BY	DATE	WEBSITE
INDIA			
Workshop on Regulating Agricultural Biotechnology: Indian and International Perspectives	National Institute of Plant Health Management (NIPHM) and Department of Biotechnology, in collaboration with the U.S. Department of Agriculture (USDA)	October 27-30, 2014 Hyderabad	http://niphm.gov.in/Training/Workshop-Regulating-Agricultural-Biotechnology-Indian-and-International-perspectives.pdf
National Seminar on Emerging Problems of Potato	Central Potato Research Institute, Shimla	November 1-2, 2014 Shimla	http://www.nsepp.in/index.html
Training Program on Analytical Techniques in Nutrition, Food Safety and Biosafety	The Asia-Pacific Association of Agricultural Research Institutions (APAARI) and the International Crops Research Institute for the Semi-Arid-Tropics (ICRISAT)	November 1-14, 2014 Telangana, Andhra Pradesh	http://www.apaari.org/events/food-safety-training.html
National Symposium on "Crop Improvement for Inclusive Sustainable Development"	Punjab Agricultural University	November 7-9, 2014 Ludhiana	http://web.pau.edu/content/banner/792.pdf
Winter School on Strategies to Enhance Oilseed Brassica Production Under Climate and Resource Constraint Scenario	Directorate of Rapeseed-Mustard Research, Bharatpur	November 11-December 1, 2014 Bharatpur	http://www.drmm.res.in/publication/DRMR_Winter_School.pdf
National Conference of Plant Physiology (NCP-2014) On "Frontiers of Plant Physiology Research: Food Security and Environmental Challenges"	Department of Plant Physiology Orissa University of Agriculture and Technology Bhubaneswar and the Indian Society for Plant Physiology	November 23-25, 2014 Bhubaneswar, Orissa	http://www.ouat.ac.in/download/NCP%202014.pdf
INTERNATIONAL			
12 th Asian Conference and Expert Consultation on Maize for Food, Feed, Nutrition and Environmental Security	Asia-Pacific Association of Agricultural Research Institutions (APAARI), International Maize and Wheat Improvement Center (CIMMYT) and Vietnam Academy of Agricultural Sciences (VAAS)	October 27-29, 2014 Hanoi, Vietnam	http://www.apaari.org/events/12th-conference-on-maize.html
13 th International Symposium on the Biosafety of Genetically Modified Organisms (ISBGMO13)	International Society for Biosafety Research (ISBR)	November 9-13, 2014 Cape Town, South Africa	http://isbr.info/ISBGMO13
Webinar on Biosafety	Food and Agriculture Organization of the United Nations (FAO)	November 12, 2014 Online	http://www.fao.org/food/food-safety-quality/events-projects/event/detail/en/c/242232/



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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