

BIO SAFETY



A Quarterly
Newsletter

Newsletter

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From the Desk of Editor



Strengthening of institutional capacities for detection of living modified organisms (LMOs) has been one of the key components of the UNEP/GEF supported Phase II Capacity Building Project of Biosafety. Four laboratories were selected after a stocktaking assessment through an international firm. These laboratories have been strengthened by providing required infrastructure and participation of scientists/technicians in training activities. The National Bureau of Plant Genetic Resources, an India Council of Agriculture Research Institute has been entrusted with the responsibility to establish a network of LMO detection laboratories in India with support from the Phase II Capacity Building Project of Biosafety.

As part of the Phase II Capacity Building Project of Biosafety, MoEFCC supported the 5th Annual South Asia Biosafety Conference (SABC) held from September 11-13, 2017 at Bangalore. Participation of scientists, regulators, industry representatives and students from more than 10 countries provided an excellent opportunity for sharing of experiences in biosafety issues at the national and regional level. MoEFCC continues to support all such initiatives for creating awareness and enhancing regional cooperation.

Amita Prasad
Additional Secretary, Ministry of Environment
Forests and Climate Change

Fourteenth Meeting of the Conference of Parties to the Convention on Biological Diversity and Concurrent meetings of the Cartagena Protocol on Biosafety and Nagoya Protocol

The Secretariat to the Convention on Biological Diversity (CBD), has announced the venue for the fourteenth meeting of the Conference of Parties to the CBD (COP14), the ninth meeting of the Conference of Parties serving as the Meeting of Parties to the Cartagena Protocol on Biosafety (COP-MOP9 of CPB) and the third meeting of the Conference of Parties serving as the Meeting of Parties to the Nagoya Protocol on Access and Benefit Sharing (COP-MOP3 of Nagoya Protocol) which is scheduled to be held concurrently from November 10-22, 2018 at Sharm El-Sheikh, Egypt. The high level segment of the meetings is scheduled for November 7-8, 2018 at the same venue. Together these meetings form part of the UN Biodiversity Conference, 2018.

Further details of the meeting agenda and documents would be uploaded by the CBD Secretariat at <https://www.cbd.int/>

5th Annual South Asia Biosafety Conference : Highlights

The 5th South Asia Biosafety Conference (SABC), an annual event under the aegis of the South Asia Biosafety Program (SABP) was organized from September 11-13, 2017 at Bangalore. The conference was co-organized by ILSI Research Foundation and Biotech Consortium India Limited (BCIL), with support from the Ministry of Environment, Forest and Climate Change (MoEFCC), Department of Biotechnology (DBT), Government of India, International Society for Biosafety Research (ISBR), National Academy of Agricultural Sciences (NAAS) and Department of Environment, Bangladesh. MoEFCC supported the conference under the UNEP/GEF supported Phase II Capacity Building Project on Biosafety.

informed about a separate cell established by the Government of Karnataka on Synthetic Biology under the Institute of Bioinformatics and Applied Biotechnology (IBAB), Bangalore. He indicated that their department has been taking up initiatives as per the advancements being made in technology towards creating capacities to deal with the same. The role of modern biotechnology as a tool towards increasing agricultural productivity was highlighted by Dr Morven McLean, Executive Director, ILSI Research Foundation in her presentation on "Connecting Innovations and Development: The Role of Modern Biotechnology". She informed that food security is the key to achieving several Sustainable Development Goals



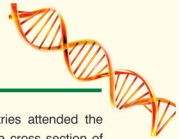
The conference was inaugurated by Dr Amita Prasad, Additional Secretary, MoEFCC and Chairperson, Genetic Engineering Appraisal Committee (GEAC). Dr Prasad appreciated this initiative of bringing together scientists and regulators from the South Asian Region in this important area of biosafety regulations. She indicated that all countries in the region are signatory to the Cartagena Protocol on Biosafety (CPB) and have implemented GEF supported capacity building projects. She informed that several outputs under the UNEP/GEF supported Phase II Capacity Building Project on Biosafety are useful for the whole region. Regional cooperation being one of the key areas, MoEFCC has supported all such initiatives as part of the project.

Shri Gaurav Gupta, Principal Secretary, Department of Information Technology, Biotechnology and Science and Technology (Department of IT, BT and ST); Govt of Karnataka spoke of various initiatives undertaken by them in promoting the biotechnology industry in the state. He

(SDGs) and the objectives of the 5th Annual SABC have been planned to be in line with the SDGs towards promoting innovations in crop biotechnology, soil and plant microbiomes, synthetic biology and new applications of biotechnology with focus on forestry and biofuels. Dr. Morven McLean stressed that addressing these serious challenges, requires bold innovation and collective action – not just in the scientific research to be undertaken, but how these are translated into impact ful and accessible solutions that contribute to the sustainability of our food systems and to development.

With the need for a proactive regulatory mechanisms that facilitates innovations to reach the society, Dr. K. VijayRaghavan, Secretary, DBT in his address through skype call opined that the regulatory focus should be on the GE products instead of the process. He also indicated that the regulatory system should be science based and not based on emotions. He particularly explained the advancements in biotechnology research such as gene





editing etc need to be dealt with in a scientific manner. The three day conference included plenary sessions, workshops, poster session and a lighting round for sharing of research initiatives of young scientists/students.

About 185 participants from 10 countries attended the conference. The participants included a cross section of stakeholders including senior officials from concerned Ministries and Departments dealing with agriculture

Inaugural session	Inaugural Ceremony
Plenary session I	Regulation and Capacity Building Initiatives in South Asia
Plenary session II	Crop Biotechnology and Biosafety in South Asia
Plenary session III	Soil and Plant Microbiomes
Workshops	<ul style="list-style-type: none"> • Thinking Ahead- Designing Confined Field Trials to Maximize Data Transportability • Best Practices for Public Sector GE Product Development Programs • Intersection of the CPB and the Indian Biosafety Regulatory System
Plenary session IV	Synthetic Biology
Plenary session V	New Applications of Biotechnology: Focus on Forestry and Biofuels



The three workshops held concurrently facilitated peer group interactions and exchange of knowledge regarding the issues faced by the scientists in taking forward the research through the regulatory process and the best practices being followed to address these challenges. The regulation of new emerging technologies and products thereof as per the Indian regulator system and Cartagena Protocol on Biosafety were extensively debated and clarifications sought.

biotechnology and biosafety issues, members/ representatives of regulatory authorities/committees, scientists, academic experts, industry representatives and students.

About 44 posters were showcased at the conference by a cross section of stakeholders comprising of regulators, research scientists, from public and private universities and industry.

Showcasing Project Outcomes : Poster Session at 5th SABC

The outcomes of activities under the Handling, Transport, Packaging and Identification and the Regional Cooperation and Networking components of the UNBEP/GEF supported Phase II Capacity Building Project on Biosafety were showcased at the poster session held on the sidelines of the 5th Annual South Asia Biosafety Conference at Bangalore from September 11-13, 2017. The project partners associated with the Phase II Capacity Building Project on Biosafety viz., Punjab Biotechnology Incubator, Export Inspection Council-Kochi, National Bureau of Plant Genetic Resources and BCIL presented the activities undertaken by them through posters.



Consultative Workshop on Harmonization of LMO/GM Detection Activities

A Consultative Workshop on Harmonization of LMO/GM Detection Activities in the Country was organized by ICAR-National Bureau of Plant Genetic Resources (NBPGR) on 21st August, 2017 at New Delhi with support from the UNEP/GEF supported Phase II Capacity Building Project on Biosafety, being implemented by the Ministry of Environment, Forest & Climate Change (MoEFCC).



Harmonization of GM detection activities across the laboratories is an important area, not only for the regulation at national level but also at international level when commodities are exported across countries where regulatory requirements are very stringent. Such harmonized understanding is imperative under CPB, to comply with the requirements of Article 17 on Unintentional Transboundary Movements and Emergency Measures, Article 18 on Handling, Transport, Packaging and Identification and Article 25 on Illegal Transboundary Movements of LMOs.

Towards a systematic approach, the views and experiences regarding the LMO/GM detection from the key representatives of detection laboratories, National Accreditation Board for Testing and Calibration of Laboratories (NABL) assessors, accreditation personnel, research experts and regulatory bodies was taken up in during the consultative workshop by NBPGR.

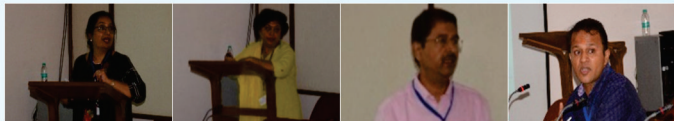
The workshop was inaugurated by Ms. Madhumita Biswas, Adviser, MoEFCC, and Dr. S. S. Marwaha, Former CEO of

Punjab Biotechnology Incubator (PBTI), Mohali. Dr. Kuldeep Singh, Director, NBPGR welcomed the participants and also presented an overview of the activities being carried out at NBPGR.

Dr. Gurinderjit Randhawa, Principal Scientist, NBPGR introduced the background of workshop and the networking of GM detection laboratories in India. She gave an overview of three Articles 17, 18 and 21 of CPB related to the transboundary movement of LMOs. Use of different DNA-based technologies including PCR, multiplex PCR, loop-mediated isothermal amplification and real-time PCR for GM detection was described along with their respective practical applicability with regard to the testing requirements. The need of screening methods along with event-specific assays to detect and quantify GMOs was also highlighted. Participants were informed about the Stocktaking assessment that was undertaken to audit and select laboratories for strengthening LMO detection capacities, under the Phase II Capacity Building Project on Biosafety by an international agency, Scan Bi Diagnostics along with support from Dr. Lalitha Gowda, Chief Scientists (Retired), CFTRI, Mysore as the national consultant.

Ms. Madhumita Biswas, Adviser, MoEFCC presented an overview of the activities under UNEP-GEF Phase-II Capacity Building Project on Biosafety with an objective to strengthen the biosafety management system in India. She also underlined the need of regulation of GMOs to address concerns related to food safety, environment and health. She informed that the GMOs are regulated under the Rules for manufacture, use, import, export and storage of hazardous microorganisms, GE organisms or cells, 1989 under the aegis of the Environment (Protection) Act, 1986. She also explained the role of various competent authorities under the Rules, 1989 towards regulation of GMOs in India.

The three representatives from NABL, Mr. Ashutosh Tatwawadi, Mr. Vinay Tyagi, Mr. Soundira Pandian and Mr. Amit Kumar; Dr. V.R. Subramaniam from Jain Irrigation, Jalgaon and Mr. Surender Pal from Tilda Riceland Pvt. Ltd., Gurgaon gave an overview of National Accreditation Board for Testing and Calibration of Laboratories (NABL) requirements of ISO/IEC 17025:2005 and NABL102 in light of GM detection and shared their experiences. The representatives from the four laboratories that have been strengthened for GM detection as part of the Phase II Capacity Building Project on Biosafety shared their views points on the NABL102 document that presents specific criteria for Biological Testing Laboratories.



Presentations being made by the speakers

Suggestions and inputs were provided by Dr. Ajit Dua and Dr. Vandana from PBTI, Mohali, Dr. Lijo John, Export Inspection Agency, Kochi, Dr. Jaya Krishna, DNA Fingerprinting and Transgenic Crop Monitoring Laboratory (DFTCML), Hyderabad and Dr. Monika Singh, ICAR-NBPGR. An overview of the Draft Training Manual on LMO detection including the modules on sample preparation & extraction, techniques for detection & identification, about quality assurance/quality control standards and reporting

was presented by Dr. Lijo John and Dr Vandana.

The panel discussion on the evolving issues related with ISO/IEC 17025:2005 and the draft training manual on LMO detection provided a platform for extensive discussion among participants and was moderated by Dr. Gurinderjit Randhawa and Dr. Ajit Dua respectively. Participants/delegates were honored with the appreciation certificates by Dr. Madhumita, and Dr. Kuldeep Singh.



Panel discussions on Evolving Issues related with ISO/IEC 17025:2005 and Draft Training Manual on LMO Detection



Networking of LMO Detection Laboratories and Establishing a Regional Network at NBPGR

A project on Network of LMO Detection Laboratories and Establishing a Regional Network has been undertaken by ICAR-NBPGR with support from the UNEP-GEF Phase-II Capacity Project on Biosafety.

Various activities being undertaken as part of the project include:

- i. Development of functional linkage of LMO detection laboratories in India by closely working with three laboratories, strengthened under Phase-II Capacity Building Project on Biosafety by MoEFCC viz. PBTI, Mohali; EIA, Kochi and DFTCML, Hyderabad/Amaravati.
- ii. Organization of a consultative workshop on harmonization of LMO/GM Detection activities. Experts from the NABL including assessors and accreditation personnel, research experts from the key LMO detection laboratories and experts the MoEFCC, deliberated in the three technical sessions and two panel discussions.
- iii. Inter Laboratory Comparison Programs (ILCP) organized by ICAR-NBPGR during August-September, 2017, twelve LMO detection laboratories including five from public sector participated. The objectives of ILCP were to detect presence/absence of CaMV35 promoter and nos terminator and species identification for cotton, maize, soybean and rice in three test samples.
- iv. For quality assurance and global harmonization, participated in two International proficiency testings, organized by the Grain Inspection, Packers and Stockyards Administration, United States Department of Agriculture (GIPSA-USDA) and European Union Reference Laboratory for GM Food and Feed, European Commission-Joint Research Centre (EC-JRC), Ispra, Italy.
- v. Along with the mapping of 25 LMO detection Laboratories in the country, a web page on 'GMO/LMO Testing Laboratories Network of India' is in final stages of development. The web page with dynamic information about GMO detection laboratories including contact details would facilitate in harmonizing the GMO/LMO detection activities in the country.
- vi. Process to establish mechanism of Rapid Alert System in case of accidental release of GMOs/ LMOs is underway.

Biosafety Capacity Building Workshop at Anand Agricultural University



A series of Biosafety Capacity Building workshops at state level have been initiated under the UNEP/GEF supported Phase II Capacity Building Project on Biosafety with an objective to enhance the capacities of the state level functionaries.

The first State Level Biosafety Capacity Building Workshop was organized at Anand Agricultural University (AAU), Anand, Gujarat on July 13, 2017. The workshop was attended by more than 120 participants comprising of officials from State Department of Agriculture, scientists, academic experts, progressive farmers and students from State Universities and private seed companies including AAU, Maharaja Sayajirao University of Baroda (MSU), Central Salt and Marine Chemicals Research Institute (CSMCRI), Bhavnagar and Directorate of Medicinal and Aromatic Plants Research (DMAPR), Boriavi.

Dr. K.B. Kathiria, Director of Research & Dean P.G. Studies, AAU welcomed the dignitaries and emphasized that GM crops are very much needed to break the yield plateau in many of the crops towards meeting ever increasing demand of food across the globe. The workshop agenda and objective was introduced by Dr. Vibha Ahuja, Chief General Manager, Biotech Consortium India Limited (BCIL). Dr. Mehboob Qureshi, Joint Director of Agriculture, Govt of Gujarat in his special address, stressed upon the need to create awareness among farmers who are the actual end users of the technology.

Dr. B. Sesikeran, Chairman, Review Committee on Genetic Manipulation (RCGM) and Former Director, National Institute of Nutrition (NIN), Hyderabad in his key note address, advocated the role of State Governments in GM regulation. He explained that the modern biotechnological

tools, especially genetic engineering have the potential for resolving several agricultural constraints ranging from inherently low crop yields to stress-related issues arising from pests, diseases and drought to mention a few. However, as the transgenic varieties are developed through alterations made at the genetic level in a way that does not occur naturally, safety concerns have been expressed by consumers and the environmentalists. This has necessitated the need for rigorous food, feed and environmental safety testing procedures. He informed that biosafety regulatory framework in India is stringent, which ensures very rigorous process for monitoring and approval of GMO's in the country and GM crop varieties are as safe as their non-GM counterparts. He informed that GM varieties are thoroughly tested for safety assessment during their research and developmental stages. Dr. N. C. Patel, Vice Chancellor, AAU opined that since more than 60-70% of the country's population is dependent on agriculture, there is a need to have a comprehensive agricultural policy, including on GM crops.

The workshop agenda was divided into two technical sessions. In the first session, presentations were focused on the biosafety regulatory framework and the capacity building initiatives under the UNEP/GEF supported Phase II Capacity Building Project on Biosafety. Sharing of the project outputs of the phase II capacity building project on biosafety and ongoing capacity building initiatives for strengthening biosafety management systems in India was presented by Dr Murali Krishna, Joint Director, MoEFCC. An overview of the biosafety regulations in India was presented by Dr Vibha Ahuja, Chief General Manager, BCIL and the science and safety aspects towards development of the GM



Presentations by state organization representatives and LMO detection demonstration

crops was presented by Dr. B. Sesikeran, Chairman, RCGM and Former Director, NIN. Dr Celia Chalam, Principal Scientist,, NBPGR provided an overview of the detection techniques for identification of living modified organisms (LMOs) and demonstrated the use of commercially available lateral flow strip test method for detection. Dr Chalam, mentioned that this test serves as a on the spot testing method for monitoring and surveillance of transboundary movement of LMOs which is useful for enforcement officials.

The various research initiatives in agricultural biotechnology in Gujarat were presented during the second technical session. The ongoing research for stress tolerance in plants, approaches in developing transgenic

groundnut, castor and cotton and the enhancement of nutritional, pharmaceutical and industrial value of maize were presented by the scientists from AAU, Anand, Directorate of Groundnut Research, Junagadh, M S University of Baroda, Vadodara, Central Salt and Marine Chemicals Research Institute and Junagadh Agricultural University.

The initiatives and challenges being faced in biosafety capacity building in the state was presented by Mrs Anasuya Bhadalkar, Sector Specialist Marine & Environment, Gujarat State Biotechnology Mission (GSBTM). The workshop concluded detailed discussions among speakers and participations towards providing clarifications.



A Proposed Framework for Identifying Potential Biodefense Vulnerabilities Posed by Synthetic Biology : Interim Report

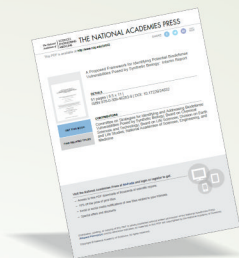
An interim report has recently been published by the National Academies of Sciences. Engineering and Medicine, Washington titled "A Proposed Framework for Identifying Potential Biodefense Vulnerabilities posed by Synthetic Biology". Whereas synthetic biology and related biotechnologies hold great promise for addressing challenges in human health, agriculture, and other realms, concerns are also being raised about possible malicious uses that might threaten human health or national security.

The interim report proposes a framework for identifying and prioritizing potential areas of concern associated with synthetic biology- a tool to aid the consideration of concerns related to synthetic biology. The framework describes categories of synthetic biology technologies and applications such as genome editing, directed evolution and automated biological design and provides a set of initial questions to guide the assessment of concern related to these technologies and applications.

The interim report is the first phase of the study by National Academies of Sciences, Engineering and Medicine, as part of the US Department of Defense's Chemical and Biological Defense Program prepared through a Committee on Strategies for Identifying and Addressing Biodefense Vulnerabilities posed by Synthetic Biology. The committee

would further consider additional data and comments from synthetic biology community towards applying the framework to current and anticipated uses of synthetic biology in its final report.

The report can be accessed at
<https://www.nap.edu/read/24832/chapter/2>



Consultations on Mainstreaming Biodiversity: National Biodiversity Action Plan, National Biodiversity Targets and India's Sixth National Report to Convention on Biological Diversity

The Ministry of Environment, Forest and Climate Change has released a brochure on Consultations on Mainstreaming biodiversity: National Biodiversity Action Plan, National Biodiversity Targets and India's Sixth National Report to Convention on Biological Diversity. It includes an introduction to Convention on Biological Diversity, the Strategic Plan for Biodiversity 2011-2020 and Aichi Biodiversity Targets, salient features of the National Biodiversity Action Plan (NBAP), National Biodiversity Targets (NBTs) and their linkages with Sustainable Development Goals (SDGs). As Mainstreaming Biodiversity Conservation is the key to effective implementation of the NBAP, examples on the importance of biodiversity in various sectors viz. agriculture, fisheries, forestry and tourism have been explained in the brochure. Details about mobilizing resources for NBTs and Biodiversity Initiative Finance (BIOFIN) project along with an introduction to indicators and monitoring framework for NBTs have also been explained.

The brochure also presents information about the national reports to CBD with the details of the format and requirements for Sixth National Report to CBD that is due for submission in December 2018. The instructions to use the NR6 web portal specifically created for seeking inputs for the Sixth National Report also form a part of the brochure.

Towards promoting wider dissemination of information the brochure has been translated into regional languages viz., Hindi, Gujarati, Marathi, Punjabi, Malayalam, Kannada and Telugu with support from State Biodiversity Boards where the regional workshops have been organized.

The website to seek inputs for the Sixth National Report can be accessed at <http://www.nationalreport6.in/>



Upcoming Events

Title	Organized/hosted by	Date and Venue	Website
NATIONAL			
International Conference on Recent Trends in Bioinformatics and Biotechnology for Sustainable Development	Sher-e-Kashmir University of Agricultural Sciences and Technology of Jammu	October 12-13, 2017, Jammu	http://www.sbbs2017.in
"Refresher Training Course for GLP Inspectors"	National Good Laboratory Practice Compliance Monitoring Authority (NGCMA), Department of Science & Technology and Quality Council of India (QCI)	October 26-27, 2017, New Delhi	http://www.sbbs2017.in
National Conference on Emerging Trends in Agrinanootechnology -2017	Acharya N.G. Ranga	October 12-13, 2017, Jammu	http://www.sbbs2017.in
1st National Biotechnology Conclave 2017: Accelerating the Biotech ecosystem in India	Confederation of Indian Industry (CII)	December 22, 2017,	http://www.sbbs2017.in
International Conference and Expo on Biotechnology and Healthcare	Centre for Good Governance and Prof. Jayashankar Telangana State Agricultural University (PITSAU)	October 26-27, 2017, Hyderabad	http://biotechconference.org/
Short Course on Modern Genomic Tools and Breeding Strategies for Biotic and Abiotic Stress Management in Sugarcane	ICAR-Indian Institute of Sugarcane Research	October 25 to November 03, 2017	http://www.iisr.in/download/TrainingOctNov2017.pdf
Training Programme on "Use of biotechnological and conventional tools in understanding virus-host interaction"	ICAR- Indian Agricultural Research Institute	November 7-27, 2017, New Delhi	http://www.iari.res.in/files/Latest-News/CAFT_Training_Brochure_PPPatho-29072017.pdf
TERI-ITEC Courses 2017-18: Course IV - Applications of Biotechnology and its Regulation	The Energy and Resources Institute	November 20 – December 8, 2017, Gurgaon	http://www.teriin.org/events/upcoming
Training Workshop Strengthening Capacities of Enforcement Agencies (Plant Quarantine & Customs Officials) for Transboundary Movement of LMOs on November 22-23, 2017	ICAR- National Bureau of Plant Genetic Resources (ICAR-NBPGR) Ministry of Environment, Forest & Climate Change (MoEF & CC), Govt. of India	November 22-23, 2017, Raaxaul, Bihar	http://www.nbpg.ernet.in/Downloadfile.aspx?Entryid=7381
Fostering Innovations in Fisheries and Aquaculture Focus on Sustainability and Safety	ICAR - Central Institute of Fisheries Technology and Asian Fisheries Society Indian Branch (AFSIB)	November 21-24, 2017, Bengaluru	http://www.icar.org.in/files/IFAfBrochure-1st%20announcement.pdf
IPSAACON2017 XXIV Annual Conference of the Indian Poultry Science Association	Indian Poultry Science Association ICAR-National Institute of Animal Nutrition and ICAR-National Institute of Animal Nutrition and Physiology	November 28-30, 2017, Bengaluru	http://www.icar.org.in/files/IPSAACON_2017%20brochure.pdf
PuSym2017 National Symposium on Pulses for Nutritional Security and Agricultural Sustainability	Indian Society of Pulses Research and Development and ICAR-Indian Institute of Pulses Research	December 2-4, 2017, Kanpur	http://www.iipr.res.in/pdf/symposium_ISPR.pdf
3rd ARRW International Symposium on Frontiers of Rice Research for Improving Productivity, Profitability and Climate Resilience	Association of Rice Research Workers in collaboration with ICAR-National Rice Research Institute	February 6-9, 2018, Cuttack	http://www.crrri.in/1circular_ARRW_IS_Feb18.pdf
Winter School (2017-18) - Molecular breeding for higher productivity, quality, food colorants, nutraceutical and bioactive health compounds in vegetable crops	Division of Vegetable Science Indian Agricultural Research Institute	February 13– March 5, 2018 New Delhi	http://www.iari.res.in/files/Latest-News/Winter_school_22092017.pdf
INTERNATIONAL			
Ad Hoc Technical Expert Group Meeting on Socio-economic Considerations (Article 26 of the Cartagena Protocol on Biosafety)	CBD Secretariat	October 9 – 13, 2017 Ljubljana, Slovenia	https://www.cbd.int/meetings/
Asian Subregional Workshop on Strengthening Capacities for the Integrated Implementation of the Cartagena Protocol on Biosafety, the Nagoya-Kuala Lumpur Supplementary Protocol on Liability and Redress and the Convention on Biological Diversity		November 6 – 10, 2017 Kuala Lumpur, Malaysia	
Meeting of the Ad Hoc Technical Expert Group on Synthetic Biology		December 5 – 8, 2017 Montreal, Canada	

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