



3 MARCH 2010

Programme for Day 3 of the FAO international technical conference on Agricultural Biotechnologies in Developing Countries (ABDC-10). Last updated 26 February 2010. Note, all documents prepared for ABDC-10 by FAO and by FAO's partners referred to below can be downloaded from <http://www.fao.org/biotech/abdc/backdocs/>

9:00-10:45	PLENARY				
9:00-9:30	Summary- output of day 2				
9:30-10:00	Biotechnologies in international agricultural research centers				
10:00-11:00	Ensuring access to the benefits of R&D				
11:00-11:30	COFFEE BREAK				
11:30-12:00	PLENARY				
12:00-13:00	Technology transfer aspects of the multilateral system of the ITPGRFA South-South collaboration				
13:00-14:30	LUNCH BREAK				
14:30-16:15	PARALLEL SESSIONS				
	Region-specific				
	Latin America and the Caribbean (IICA, REDBIO/FAO)	Near East and North Africa (AARINENA)	Sub-Saharan Africa (FARA)	Asia-Pacific (APAARI)	Europe and Central Asia (FAO Regional Office for Europe and Central Asia)
16:15-16:45	COFFEE BREAK				
16:45-18:30	PARALLEL SESSIONS				
	Cross-cutting issues				
	Policy coherence at the regional level (UNCTAD)	Biosafety in the broader context of biosecurity (FAO)	Intellectual property rights in agricultural biotechnology (WIPO)	Utilisation of plants for non-food uses: Challenges and perspectives (UNIDO)	Conservation and sustainable use of genetic resources for food and agriculture (CGIAR)
18:45-21:00	KNOWLEDGE SHARE FAIR				

9.00 -11.00: Plenary Session

1. Presentation of short reports summarizing results of the 10 parallel sessions held on afternoon of 2 March

2. Biotechnologies in international agricultural research centers

By Thomas Lumpkin, Director General, International Maize and Wheat Improvement Center (CIMMYT), El Batan, Mexico.

3. Ensuring access to the benefits of research and development

Relevant background information is contained in Section C of the background document “*Policy options for agricultural biotechnologies in developing countries*” (ABDC-10/8.1; its synthesis is provided in document ABDC-10/8.2). Section C is entitled “Ensuring access to the benefits of agricultural biotechnologies” and it comprises three main sections:

- Intellectual property rights

- Public awareness and participation
- Agricultural extension

11.30 -13.00: Plenary Session

1. Technology transfer aspects of the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture

By Shakeel Bhatti, Secretary of the International Treaty on Plant Genetic Resources for Food and Agriculture, Rome, Italy

2. South-South collaboration

14.30 – 16.15: Parallel Sessions: Region-specific

For these parallel sessions, FAO invited relevant regional organizations to organize parallel sessions for their region. The scope of each regional session is to address the potential role of biotechnologies for agricultural development in the region and to cover the entire range of biotechnologies across all the food and agricultural sectors. In addition, FAO suggested that it would be important to address both cross-sectoral and sector-specific themes and that, in this context, the SWOT analysis method would be utilized to evaluate the Strengths, Weaknesses, Opportunities, and Threats (SWOT) related to the generation, adaptation and adoption of appropriate biotechnologies in the region, with both technical and policy issues being addressed. Based on the SWOT analysis, the expected outputs from each session will be to formulate regional/sub-regional priorities (taking into account the existing capacities), that could feed into and be considered while dealing with discussions on options for developing countries and on Priorities for Action for the international community on the last day of the conference.

The organizers of each session were also invited to contribute an Issue paper providing an overview and potential analysis of the current strengths, weaknesses, opportunities and threats for the generation, adaptation and adoption of appropriate biotechnologies for food and agriculture in the region, to facilitate the discussions during the session. Analysis in the Issue paper should be done at three levels: strategy/policy options, institutional and human resources. Those provided can be downloaded from <http://www.fao.org/biotech/abdc/backdocs/en/>. The organizers were also invited to provide a short abstract describing the session content. These abstracts are provided at the end of this document. Both the Issue papers and the abstracts are the responsibility of the session organizers.

The structure that FAO suggested for each session to the organizers was one with 1-2 speakers/panellists, each of whom would speak for 10 minutes (providing a brief background on the topic and setting the scene) followed by an open discussion moderated by a facilitator.

a) Generation, adaptation and adoption of appropriate biotechnologies in the Latin America and the Caribbean Region: Concrete actions for the near future

Organized by the Inter-American Institute for Cooperation on Agriculture (IICA), the International REDBIO Foundation and the Technical Cooperation Network on Plant Biotechnology in Latin America and the Caribbean (REDBIO).

A background document has been provided, see document ABDC-10/IICAREDBIO

This session will take place mostly in Spanish.

Speakers:

1. Rodomiro Ortiz, international consultant, Lima, Perú
2. Moises Burachik, Dirección de Biotecnología, Secretaría de Agricultura, Ganadería y Pesca, Buenos Aires, Argentina

3. Arthur Mariante, Embrapa Recursos Genéticos e Biotecnologia, Brasilia, Brazil

Facilitator: Michelle Chauvet, Universidad Autónoma Metropolitana, Mexico City, Mexico

b) Developing priority actions for agricultural biotechnology in West Asia and North Africa (WANA) to face the challenges of food insecurity and climate change

Organized by the Association of Agricultural Research Institutions in the Near East and North Africa (AARINENA).

An Issue paper has been provided, see document ABDC-10/AARINENA.

Speakers:

1. Osama Momtaz, Agricultural Genetic Engineering Research Institute (AGERI), Agricultural Research Center (ARC), Giza, Egypt
2. Ahmed Abdul Kader, Department of Biotechnology, General Commission for Agricultural Scientific Research (GCSAR), Damascus, Syria
3. Michael Baum, Biodiversity and Integrated Gene Management Program, International Center for Agricultural Research in the Dry Areas, Aleppo, Syria.

Facilitator: Alexander Percy-Smith, Faculty of Agricultural Sciences at the University of Aarhus, Denmark

c) Harnessing biotechnology for agriculture in sub-Saharan Africa in the era of climate change: challenges and options

Organized by the Forum for Agricultural Research in Africa (FARA).

An Issue paper has been provided, see document ABDC-10/FARA.

Speaker:

1. Jane Morris, African Center for Gene Technologies, Pretoria, South Africa
2. Adama Traore, Comité National de la Recherche Agricole, Bamako, Mali

Facilitator: Diran Makinde, NEPAD African Biosafety Network of Expertise (ANBE), University of Ouagadougou, Burkina Faso

d) Harnessing biotechnologies for food security in the Asia-Pacific region

Organized by the Asia-Pacific Association of Agricultural Research Institutions (APAARI)

An Issue paper has been provided, see document ABDC-10/APAARI.

Speakers:

1. Jawahir Karihaloo, Asia-Pacific Consortium on Agricultural Biotechnology, APAARI, New Delhi, India
2. Chanda Nimbkar, Nimbkar Agricultural Research Institute, Phaltan, India

Facilitator: Sudhir Sopory, Plant Molecular Biology, International Centre for Genetic Engineering and Biotechnology, New Delhi, India

e) Agricultural biotechnologies in Europe and Central Asia: New challenges and opportunities in a view of recent crises and climate change

Organized by the FAO Regional Office for Europe and Central Asia (REU), Budapest, Hungary

An Issue paper has been provided, see document ABDC-10/ECA

Speakers:

1. Atanas Atanassov, Black Sea Biotechnology Association, Sofia, Bulgaria

2. Guy Van den Eede, Biotechnology and GMOs Unit, European Commission - Joint Research Centre Institute for Health and Consumer Protection (EU-JRC), Ispra, Italy

Facilitator: Joachim Schiemann, Julius Kühn Institute, Federal Research Centre for Cultivated Plants, Braunschweig, Germany

16.45 – 18.30: Parallel Sessions: Cross-sectoral issues

For these parallel sessions, FAO invited relevant intergovernmental and non-governmental organizations to organize parallel sessions on a specified issue of cross-sectoral importance. For each one, the programme for the session was developed by the organizers, with guidance from FAO. The structure that FAO suggested for each session to the organizers was one with 2-3 speakers/panellists, each of whom would speak for 15 minutes (providing a brief background on the topic and setting the scene) followed by an open discussion moderated by a facilitator. The organizers were also invited to contribute an Issue paper, focussing on the key topics to be discussed during the session, and those provided can be downloaded from <http://www.fao.org/biotech/abdc/backdocs/en/>. They were also invited to provide a short abstract describing the session content. These abstracts are provided at the end of this document. Both the Issue papers and the abstracts are the responsibility of the session organizers.

a) Policy coherence and the status of biotechnology policy-making, regulations and development. The experience of COMESA, ASEAN and CARICOM regions

Organized by the United Nations Conference on Trade and Development (UNCTAD)

Speakers:

1. Banpot Napompeth, National Biological Control Research Center, Kasetsart University, Bangkok, Thailand
2. Wendy Hollingsworth, Policy NetWorks International Inc, St. Lucy, Barbados
3. Walter S. Alhassan, African Biotechnology and Biosafety Policy Platform, FARA, Accra, Ghana

Facilitator: Thomas Dubois, International Institute of Tropical Agriculture, Kampala, Uganda

b) Biosafety in the broader context of biosecurity

Organized by the FAO Nutrition and Consumer Protection Division.

An Issue paper has been provided, see document ABDC-10/Biosecurity

Speakers:

1. Ruth Frampton, independent consultant, Christchurch, New Zealand
2. Marilia Nuti, Embrapa Agroindustria de Alimentos, Rio de Janeiro, Brazil
3. Bertrand Dagallier, Organisation for Economic Co-operation and Development (OECD), France.
4. Sol Ortiz-Garcia, Consejo Nacional de Ciencia y Tecnología (CONACYT), Colonia del Valle, Mexico
5. Sridhar Dharmapuri, FAO Nutrition and Consumer Protection Division, Rome, Italy

Facilitators:

1. Ruth Frampton
2. Masami Takeuchi, FAO Nutrition and Consumer Protection Division, Rome, Italy

c) Intellectual property rights in agricultural biotechnology

Organized by the World Intellectual Property Organization (WIPO)

Speakers:

1. Jorge Cabrera Medaglia, National Biodiversity Institute (INBio), San José, Costa Rica
2. Raimundo Ubieta Gomez, Intellectual Property Department, Centre for Genetic Engineering and Biotechnology, Havana, Cuba
3. Decio Ripandelli, Administration and External Relations, International Centre for Genetic Engineering and Biotechnology, Trieste, Italy

Facilitator: Anja von der Ropp, Public Health and Life Sciences Section, WIPO, Geneva, Switzerland

d) Utilisation of plants for non-food uses: Challenges and perspectives

Organized by the United Nations Industrial Development Organization (UNIDO)

Speakers:

1. Luis Herrera, Laboratorio Nacional de Genómica para la Biodiversidad, Centro de Investigación y de Estudios Avanzados del Instituto Politécnico Nacional (CINESTAV), Irapuato, Mexico
2. Antonio Paes de Carvalho, Federal University of Rio de Janeiro and Extracta Moleculas Naturais S/A, Rio de Janeiro, Brazil
3. Ivan Ingelbrecht, Institute of Plant Biotechnology for Developing Countries, Ghent University, Belgium.
4. Jonathan Gressel, Plant Sciences, Weizmann Institute of Science, Rehovot, Israel

Facilitator: George Tzotzos, UNIDO, Vienna, Austria

e) Conservation and sustainable use of genetic resources for food and agriculture (in collaboration with the CGIAR)

Speakers:

1. Thomas Payne, Wellhausen Anderson Genetic Resource Center, CIMMYT, Mexico
2. Arthur Mariante, Embrapa Recursos Genéticos e Biotecnologia, Brasilia, Brazil
3. Jean-Christophe Glaszmann, Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD), Montpellier, France
4. William Roca, Coordinator LAC-Biosafety Project, Lima, Peru

Facilitator: Dave Hoisington, International Crops Research Institute for the Semi-Arid Tropics, Hyderabad, India

18.45 – 21.00: Knowledge Share Fair

The Knowledge Share Fair will take place in the foyer of the Conference rooms in the Hilton Guadalajara Hotel on the evenings of 1-3 March. Its purpose is to promote good knowledge sharing practices in the field of agricultural biotechnologies (for crops, forestry, livestock, fisheries and aquaculture, agro-industry) for rural development and food security. This event will offer ABDC-10 participants a place to meet informally, discuss and share ideas, experiences, and information. There are 20 information booths available, 20 boards for posters and 20 tables for information materials (leaflets, brochures, publications etc). There will also be limited opportunity for 'Open Space', a method for suggesting an idea/theme and then convening small groups around a specific question, task, or area of importance. The groups thus formed would create their own agenda and examine the issues on hand. Proposals for Open Space initiatives can be submitted directly during the conference in Guadalajara.

ABSTRACTS

Abstracts provided by the organizers for the parallel sessions they are organizing on 3 March

14.30 – 16.15: Parallel Sessions: Region-specific

Generation, adaptation and adoption of appropriate biotechnologies in the Latin America and the Caribbean Region: Concrete actions for the near future (Organized by IICA, REDBIO Foundation and REDBIO)

The Latin America and the Caribbean (LAC) Region Parallel Session of the ABDC-10 will focus in two major pillars of such endeavor.

First, it is necessary to assess which biotechnologies are already available and suited for application to food/feed crop production and their status in the Region. The creation, screening and selection of new or “orphan” genetic variation in the present production and management systems considering also sustainable crop production intensification and climate change is a must. This analysis may be focused in smallholders and family agriculture to consider national and/or sub regional biotechnology institutional capacity for R&D and on-farm participatory plant breeding programmes issues including regional and sub regional operating networks. There are key unsolved critical problems as biotic and biotic stresses, genetic base narrowing and yield gap, nutritional enhancement and sustainable and environmental friendly crop production that are of first order consideration.

Second, and not last, the parallel session will need to consider the needed biosafety regulations and the corresponding perspectives, needs and actions to strengthening at national level. As countries differ in their biological diversity they harbor (some are mega-diverse), the size and suitability of agricultural areas, and the balance between agro-ecosystems and protected ecosystems, these facts give the region its rich and diversified character at the same time they demand particular environmental considerations for each particular case, as a result, different environment protecting goals will reflect on biosafety criteria. In particular, the parallel session may focus in the need for harmonization and coordination efforts on biosafety regulations. The on-going FAO and REDBIO sub regional project TCP/RLA/3109: “*Development of reference technical tools for Biosafety Management in Extended Mercosur Countries,*” is a critical example for national capacity reinforcement. Harmonization also entails the recognition of areas in which work is still needed to achieve the desired status.

Biotechnology and biosafety research are rapidly evolving fields. It is also a field in which journals are often misled by flawed “scientific” reports. Active exchange and information sharing, as well as discussions about pertinent literature could be a possible action that will tend to build a rational approach and to harmonize views on conflictive issues. This may in turn impact on regulatory harmonization as results of biosafety research are relevant to regulators for their day-to-day work and also for conceptual reshaping regulations when needed. Joint regional projects would be a way of achieving this.

The ABCD-10 parallel session for the LAC session has an important task and challenge ahead. Presentations will open the discussions and bring to us an updated vision regarding the biotechnology and biosafety regional status. It is expected, that in a short but active session, with the help of a facilitating mechanism and counting with the experience of national R&D, academics, private and NGO experts and the proactive role of networks as REDBIO/FAO and of IICA, a set up of initiatives will start to be defined with proper and responsible follow up.

Developing priority actions for agricultural biotechnology in West Asia and North Africa (WANA) to face the challenges of food insecurity and climate change (Organized by AARINENA)

The aim of this session is to achieve a shared understanding among various stakeholders on:

- The strengths, weaknesses, challenges and opportunities for agricultural biotechnology in the WANA region
- The priority actions required, addressing priority research themes, policy-issues, institutional and human resources development.

The WANA region is characterized by high water scarcity, high vulnerability to climate change and growing food insecurity. Hence the generation, development, application and scaling-up of agricultural biotechnology improvements will be crucial for adapting to climate change and improving food security.

The participants of the session are expected to represent various stakeholders, such as the research and extension community, policy makers and government institutions, farmer organizations and regional and international organizations and the private sector. The session will draw on an *Issue Paper*, prepared by the AARINENA biotechnology network. The two speakers will briefly present the Issue Paper, which includes a SWOT-analysis for agricultural biotechnology in WANA region as well as suggestions and recommendations for priority actions.

The SWOT-analysis will not only focus on scientific issues, but will equally address policy, institutional and capacity building issues for the region. The priority actions are resulting from the SWOT analysis, building on the existing opportunities and core strengths in agricultural biotechnology in the WANA region. The session will discuss and provide constructive feedback on the Issue paper and will conclude by a broad consensus on the priority actions for the WANA region, which will feed into the global session on the final day.

Since agricultural biotechnology covers a large number of sub-disciplines, a number of priority themes with high relevance for the WANA region will be used to focus the discussion. The priority themes for the WANA region are Genomics, GMO-detection, Bio-safety. As mentioned above, not only research priorities will be addressed but also issues as intellectual property rights, government regulatory capacity, standardization procedures and innovations in extension services to allow adoption and scaling-up of the use of improved plant and animal resources by farmers, including the resource-poor farmers. Capacity development and the role of regional cooperation and south-south learning will also be discussed.

Harnessing biotechnology for agriculture in sub-Saharan Africa in the era of climate change: challenges and options (Organized by FARA)

Given the right investment in research in a generally favourable policy environment a few successes have been chalked in agricultural productivity in sub-Saharan Africa (SSA). Conventional plant breeding techniques supported by conventional biotechnology application contributed to the development of the *NERICA* rice that has revolutionised upland rice production in Africa. The application of tissue culture techniques to banana production in Kenya is another example of the extent to which the application of conventional biotechnology, namely tissue culture, can heighten rural incomes through increased yields and the expansion in area under banana.

The use of modern biotechnology depends on molecular techniques that further enhance the potential of conventional techniques in crop improvement. The tools of modern biotechnology range from the use of molecular markers as aids to selection by plant breeders to genetic engineering or so-called genetic modification (GM) techniques. These tools in combination with traditional approaches have led to the development of new plant varieties with qualities that would have been extremely difficult to develop from conventional techniques alone.

This session will examine the strengths, weaknesses, opportunities and threats associated with the deployment of the various tools of biotechnology spanning conventional techniques to molecular/GM techniques and assist in the development of priority actions to harness biotechnology for food security in sub-Saharan Africa in the era of climate change.

Harnessing biotechnologies for food security in the Asia-Pacific region (Organized by APAARI)

Recognising the opportunities provided by biotechnology tools and techniques, several developing countries of the Asia-Pacific region have made policy commitments towards adoption of biotechnology for agricultural development. There have also been some prominent successes in farm level application of biotechnology with positive impacts on production and farmer income. Tissue culture based propagation and planting material production in banana, potato, sugarcane, citrus, orchids and other ornamental plants has been adopted in a number of countries. Genetically modified cotton and maize hybrids have become popular in India and the Philippines, respectively. In the livestock sector, reproductive biotechnologies have been used with good success in farm animal improvement. While these successes are noteworthy, there is still a large gap between the potential of biotechnology and its effective implementation to address agricultural productivity issues in the region.

This session will address the potential of entire range of conventional and modern biotechnologies in agricultural development of the Asia-Pacific region. Two brief presentations, one on crops and forestry and another on livestock, poultry, fisheries and aquaculture will provide the background and set the scene for ensuing discussion. The objective will be to review the progress in application of biotechnology highlighting some successes and failures, and evaluate the policy and technical strengths, weaknesses, opportunities and threats (SWOT) related to the generation and adoption of biotechnologies in the region. Following discussion on the identified issues, regional and sub-regional priorities will be identified that would feed into the discussions on options for developing countries and on Priorities for Action for the international community on the last day of the conference. Some of the issues identified during earlier regional meetings on biotechnology for agricultural development in the region that could be considered for discussion are:

1. Strengthening biotechnology adoption (technologies, commodities, supporting policies, public investments, infrastructure)
2. Regulatory management (policy framework, infrastructure, transboundary movement)
3. Awareness and participation (improving communication, education, public participation)
4. Capacity building (areas, regional and interregional collaboration, funding)
5. Linkages (regional, south-south, north-south, public-private)

Agricultural biotechnologies in Europe and Central Asia: New challenges and opportunities in a view of recent crises and climate change (Organized by REU)

Climate change is a complex global issue with regional implications and location specificity, whose impact on agriculture and related sectors, coupled with recent food and economic crises is likely to aggravate its chronic problems and negatively affect the sustainability of the sector. Biotechnology, which includes tissue culturing, gene transfer, immunological techniques, molecular genetics and recombinant DNA, is recognized as a powerful tool that, if properly focused, can offer new solutions for a number of old challenges and significantly contribute to the sustainable development of agriculture, fisheries and forestry, as well as the food industry, particularly for developing countries and transition economies like most of the countries in CEE and Central Asian region.

Notwithstanding the great potential for benefits that this technology could bring to the environment and society, there is a common understanding within the community at large that a balanced and comprehensive approach of biosafety is needed for evaluating the possible adverse effects from the deliberate release of GMOs into the environment, as well as their use in human and animal diets.

The session will address first the potential of biotechnologies for agricultural development in Europe and Central Asia (ECA) by covering the entire range of biotechnologies across the food, agriculture, fisheries and forestry sectors against the background of the new challenges posed by recent crises and climate change and highlighting the biotechnology applications developed locally and adapted to

prevailing and expected conditions in the region. An emphasis will be given to biotechnology applications in the countries with economies in transition in ECA

Further, the cross sectorial issues as capacity-building, information and knowledge-sharing and networking, as well as policy and regulatory frameworks development and implementation, including co-existence will be addressed in the context of several examples from EU and the ECA region as a whole.

During the discussion, the SWOT method will be used to analyse the generation, adaptation and adoption of appropriate biotechnologies in the ECA region, taking into consideration policy and legal framework, human resources, among other relevant factors. As a main output, the regional session for ECA will identify regional/subregional priority areas that require further assistance and which will be considered while discussing Priorities for Action for the international community

16.45 – 18.30: Parallel Sessions: Cross-sectoral issues

Policy coherence at the regional level (Organized by UNCTAD)

This session on policy coherence in biotechnology at the national, regional and international levels presents the experiences of the ASEAN (Association of Southeast Asian Nations), CARICOM (Caribbean Community and Common Market) and COMESA (Common Market for Eastern and Southern Africa) regions in developing and implementing regional and national biotechnology policies in agriculture. The session identifies steps taken to develop regional guidelines and a road map to assist national action. It identifies gaps and highlights critical areas for: enhancing the capacity of regional groupings to present and advocate policies, regulations, procedures, and guidelines for national consideration in order to make informed decisions; and effectively deal with policy challenges and promote policy coherence related to the handling and managing of biotechnologies in the areas of agriculture, trade and emergency food aid.

In Africa, COMESA is the largest trading economic bloc on the continent, has 19 member states, a population of over 389 million people, Agriculture looms large in the economies of COMESA countries in terms of livelihood, employment and intra regional trade. However, cyclical droughts and abiotic stresses such as diseases and pests affect productivity of most staple crops predisposing the region to food security problems and chronic poverty. Biotechnology has been highlighted as having the potential to contribute to the food security and poverty alleviation goals of these countries.

However, biotechnology applications can only occur under conditions of an enabling regulatory environment. Consequently, countries have taken and are taking steps to develop regional and national regulatory frameworks to ensure the safety of humans and the environment in the application of biotechnology.

An assessment of the status of biotechnology and biosafety policies and frameworks within Member States and regions shows that countries are at different levels of development in terms of biotechnology and biosafety policy and legislative frameworks. In the case of COMESA, member countries would benefit greatly from a regional approach to development and implementation of biotechnology and biosafety policies and legal frameworks.

Biosafety in the broader context of biosecurity (Organized by the FAO Nutrition and Consumer Protection Division)

Biosecurity is a strategic and integrated approach that encompasses the policy and regulatory frameworks (including instruments and activities) for analysing and managing relevant risks to human, animal and plant life and health and associated risks to the environment. In this context advocated by the Food and Agriculture Organization of the United Nations, biosafety is generally taken to mean “the safe use for human, animal and plant health, and the environment, of new biotechnologies.” This

working definition is somewhat broader than that adopted elsewhere. It is well recognised that the application of biotechnologies for biosecurity purposes, including improving food safety and quality presents new opportunities and potential benefits. Fast and efficient biotechnology based processes are aiding the production of new food additives, preservatives and supplements. Molecular and biochemical methods are making quick and large scale detection of potential biological and chemical hazards possible.

Further technical advances and cost reductions are easing the adoption process for developing countries. It is foreseeable that biotechnology will play a major role in agriculture and safeguarding food supply in most parts of the world in the future. However, the evolution of biotechnologies as detection, safety and/or quality tools needs to go hand in hand with regulation. Biosecurity encourages a risk-based approach to regulatory programmes – that is, decisions and actions based on specific knowledge of risks to health or life. Risk analysis in biosecurity is a scientifically-based process that enhances cross-sectoral cooperation at the national level among all stakeholders. It is used to identify hazards and characterize their adverse health impacts so as to objectively determine the risk (benefits and threats) and select any controls needed. In the context of biosecurity, robust risk/safety assessment applies to managing risks to human, animal and plant life and health and associated threats to the environment, including the case by case evaluation of the biosafety of new biotechnologies. Significant experience in the conduct of risk/safety assessments has been gained by developed and developing countries in the past two decades. For example, such an assessment process had to be established for genetically-engineered crops and for human foods and animal feeds derived from them.

This session will highlight success stories in developing countries in utilising biotechnologies for food and environmental safety. It will relate national and regional efforts at drawing up biosecurity frameworks and the actions to implement biosafety related measures. The process of holding stakeholder consultations, framing appropriate legislations and setting up institutional frameworks to implement a biosecurity strategy will be underscored. At the multilateral level, these experiences can be utilised by developing countries as a source of sound and unbiased advice.

Detailed programme for the session

Wednesday 3 March 2010		
5 minutes	Welcome	Takeuchi
15 minutes	Presentation 1: Principles and concepts of biosecurity <ul style="list-style-type: none"> • Context of biotechnologies in food and agriculture. • Incorporating new and emerging technologies into biosafety policy. • Importance of legislative and institutional arrangements for biosafety issues. • Co-ordination mechanisms at national and regional levels (biosecurity ministry in New Zealand). • Establishing biosecurity frameworks in developing countries (examples from the Asia-Pacific). 	Frampton
5 minutes	Q and A	
15 minutes	Presentation 2: Risk and safety assessment of modern biotechnology products – OECD harmonized approach and tools <ul style="list-style-type: none"> • OECD biosafety work • Generating “Consensus Documents” relevant for environmental assessment and decision making process: maize, cucurbits (<i>Mexico</i>) • One success story example on food/feed safety: (<i>Brazil</i>) 	Dagallier Ortiz-García Nutti

5 minutes	Q and A	
15 minutes	<p>Presentation 3: Implementing the FAO biosecurity approach in developing countries.</p> <ul style="list-style-type: none"> • FAO's role in assisting countries to develop biosecurity programmes (including dealing with GM, nano, emerging technologies) • Food safety is a fundamental public health concern in developing countries and biotechnology offers valuable tools to enhance it. • FAO's assistance to countries (Bhutan, Gambia) in enhancing food safety. • Capacity building for food inspectors, quarantine officials, regulators and training of food safety scientists in Bhutan in the biosafety context. • Identifying and adopting useful biotechnologies for analysis of food safety and quality. • Biosafety + biosecurity approach - hand-in-hand with biotechnologies 	Dharmapuri
5 minutes	Q and A	
40 minutes	<p>Open discussion</p> <ul style="list-style-type: none"> • Co-operation – between organisations • Risk assessment and communication • Costs of biotechnologies • Regulatory issues – oversight • Capacity building – trainers and laboratories (what international organizations can offer etc) 	

Intellectual Property Rights in Agricultural Biotechnology (Organized by WIPO)

Intellectual property (IP) rights play a role in addressing the challenge of food security insofar as it promotes technological innovation that permits attaining this goal. The IP system cannot be a standalone mechanism for creating the infrastructure for innovation, the development of agricultural biotechnologies and their diffusion. Yet it can provide options for managing knowledge to ensure that inputs are properly respected and to ensure that outputs are effectively leveraged to achieve the goals of the program for innovation and access to agricultural biotechnologies.

This parallel session is expected to address the following questions:

1. What are the elements of a legal framework for innovative products and processes in the area of agricultural biotechnology that fosters food security? (Conventional IP, sui generis plant variety protection, protection of traditional knowledge?) How does the IP system interact with systems that regulate access to genetic resources, biodiversity conservation and health and environmental safety?
2. To what extent are certain technologies protected? How can the ability to assess the freedom to operate in developing countries be enhanced?
3. How can the ability of public sector researchers to access protected technology be improved? (E.g. through agreements with the private sector?)
4. What strategies of protection can be used to maintain a say over how research results will be used in a way consistent with the strategic goals and to attract new partners from the private sector?

5. What are best licensing practices for IPR owners that allow wide diffusion of agricultural biotechnologies?

6. What are elements of agreements between the public and the private sector that favour the development of technologies for the benefit of society?

Utilisation of plants for non-food uses: Challenges and perspectives (Organized by UNIDO)

Industry, governments, international development agencies and academia are uniting their efforts to design new value chains based on the use of plant biomass as a renewable feedstock for the production of energy, fuels and chemicals. This transition from the present petrochemical-based industry is driven by the convergence of a number of global opportunities and challenges: On the one hand, concerns over the polluting consequences of an economy built on non-renewable resources, the sustainability of these resources and widespread acknowledgement of food security issues are significant global problems that must urgently be addressed. At the same time, the unprecedented upsurge in knowledge of the value inherent in biological systems presents a coherent solution in new business strategies to offset some of these issues.

Biotechnology can make significant contributions to eliminating pollution and waste generation at the source of industrial production. Recent advances of high-throughput screening technologies and breakthroughs in 'omics' technologies and systems biology is making available an increasing number of much needed products and processes that require less amounts of chemical and energy inputs than conventional solutions. The application of novel biotechnologies to develop high-added value products from plants offers developing countries unique opportunities to leverage their rich endowment in biological resources for sustainable economic development.

During this session the utilisation of biodiversity and crops for non-food applications will be discussed. Major examples of industrial biotechnology for biomass crops will be highlighted and awareness generated on technological, regulatory and socio-economic opportunities and challenges posed by the emergence of bio-based industries. Furthermore, mechanisms will be discussed how developing countries could better access technological know-how through partnerships, the engagement of small and medium sized enterprises (SMEs) in such partnerships and, whenever necessary, strengthening their capacities in research, regulatory compliance and technology management.

Conservation and sustainable use of genetic resources for food and agriculture (Organized by the CGIAR)

Global genetic resources are the founding blocks on which improvements in future food production will be based. Plant and animal species have evolved under varying environmental conditions and thus, contain potentially useful genetic variants that when introgressed into modern domesticated species can provide improved performance and value-added traits. Even many domesticated species have undergone significant selection over many years by farmers and are also important sources of improved nutrition and resistances/tolerances to environmental stresses and diseases. Much effort has already been focused on the collection and preservation of a wide range of important food species. Many of these have also been characterized for several key phenotypic traits. More recently, molecular genomic techniques have been applied to further characterize and analyze large collections of many species. As molecular technologies become even larger scale and lower cost, plans are being discussed to sequence the genomes of entire collections (e.g., in rice). Such combination of phenotypic and genotypic characterization provides unique opportunities to discover novel genetic diversity in these vast collections. Once uncovered, the novel alleles can now be crossed into new germplasm via a range of techniques. The session will discuss the status of the global collections of important plant and animal genetic resources, efforts to effectively characterize these and how modern molecular methods enhance their use in breeding programs. Special attention will be given on how to better enable the use of genetic resources in research and breeding programs in developing countries.