

ABDC-10 REPORT

15.1 INTRODUCTION

Participation at the ABDC-10 conference was by invitation and it brought together about 300 policy-makers, scientists and representatives of intergovernmental and international non-governmental organizations. This included delegations from 42 FAO member countries, namely Algeria, Argentina, Bhutan, Brazil, Cameroon, Canada, Cape Verde, the Cook Islands, Cuba, the Dominican Republic, Egypt, El Salvador, Gabon, the Gambia, Grenada, Guatemala, Haiti, India, Indonesia, Kenya, Lesotho, Malawi, Malaysia, Mexico, Morocco, the Netherlands, Nigeria, Pakistan, Panama, Peru, Qatar, Senegal, Sri Lanka, Suriname, United Republic of Tanzania, Thailand, Trinidad and Tobago, Turkey, United States of America, Uruguay, Zambia and Zimbabwe. On the afternoon of the final day, the member countries adopted the conference report, which is provided in this Chapter. Note, when references are made in the report to FAO background documents, keynote presentations or parallel session summary reports, the appropriate chapter in this book is now cited.

15.2 REPORT

I. OPENING OF THE CONFERENCE

1. The International Technical Conference on Agricultural Biotechnologies in Developing Countries: Options and Opportunities in Crops, Forestry, Livestock, Fisheries and Agro-industry to Face the Challenges of Food Insecurity and Climate Change (International Technical Conference), met in Guadalajara, Mexico, from 1 to 4 March 2010¹.

¹ The list of delegates and observers is available in Appendix D at www.fao.org/docrep/meeting/019/al295e.pdf

II. INTRODUCTORY REMARKS BY FAO AND THE GOVERNMENT OF MEXICO

2. Mr Alvaro García Chávez, Secretario de Desarrollo Rural del Gobierno del Estado de Jalisco (Mexico), welcomed delegates and observers to the beautiful city of Guadalajara, noting that the state of Jalisco is a leading agriculture producer. He stressed the importance of this timely global Conference indicating that agriculture needed improved technologies and tools to meet the challenges imposed by global food insecurity and poverty. Mr García Chávez stated that the tools and products of biotechnologies had to be used and produced in a responsible manner to achieve food security while ensuring biosafety and protection of the environment.

3. Mr Modibo Traoré, Assistant Director-General, Agriculture and Consumer Protection Department, of the Food and Agriculture Organization of the United Nations (FAO), welcomed delegates and observers². On behalf of Dr Jacques Diouf, FAO Director-General, he thanked the Government of Mexico for hosting the event and FAO's partners in the initiative, including: the Mexican Ministry of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA), the International Fund for Agricultural Development (IFAD), the Consultative Group on International Agricultural Research (CGIAR), the Global Forum on Agricultural Research (GFAR), the International Centre for Genetic Engineering and Biotechnology (ICGEB) and the World Bank. The Conference has brought together policy makers, scientists, civil society and the private sector from FAO member states to take stock of the applications of biotechnologies across the different food and agricultural sectors in developing countries, to learn from the past successes and failures, and to chart a better course for the future. Mr Traoré stressed that the international community should play a key role in supporting developing countries by fostering partnerships and providing a framework for international cooperation and funding for the generation, adaptation and adoption of appropriate biotechnologies.

4. Mr Mariano Ruiz-Funes Macedo, Subsecretario de Agricultura, SAGARPA (Mexico) welcomed delegates and observers³. He expressed solidarity with Chile in light of the recent natural disaster and the challenges it was presenting for the country. Mr Ruiz-Funes Macedo noted that the growing human population is increasing the demand for food and other agriculture products and, at the same time, there is need to ensure maintenance of natural resources and the conservation of biodiversity. He indicated that Mexico is investing in developing skilled technicians and scientists in order to develop and effectively use biotechnologies, while recognizing the need to integrate modern and emerging technologies

² His statement is in Chapter 14.2 of this book

³ His statement is in Chapter 14.3 of this book

with traditional knowledge and practices. Mr Ruiz-Funes Macedo expressed hope that the Conference would help to improve the availability of biotechnology tools for developing countries to support enhanced agriculture production while protecting the environment.

III. KEYNOTE ADDRESS

5. A representative of FAO read a keynote address on behalf of Mr M.S. Swaminathan, Chairman of the M.S. Swaminathan Research Foundation and Honorary Chair of the Conference Steering Committee⁴. He noted that biodiversity is the feedstock not only for food and health security, but also for the management of climate change, but unfortunately is rapidly being lost. Mr Swaminathan indicated the importance of the Convention on Biological Diversity and the International Treaty on Plant Genetic Resources for Food and Agriculture in addressing the conservation and the sustainable and equitable use of biodiversity, while observing that each nation is responsible for conserving its biodiversity. In his address, Mr Swaminathan stated that the fields of molecular genetics and genetic engineering have opened up opportunities to meet current global challenges. He also indicated that every country should have an independent National Biotechnology Regulatory Authority to ensure that policies provide for the well-being of farmers and consumers, protection of the environment and the security of trade in farm commodities. Mr Swaminathan hoped the Conference would provide a road map to help achieve sustainable food security.

IV. ELECTION OF THE CHAIRPERSON, VICE-CHAIRPERSONS AND RAPPORTEUR

6. Mr Jeffrey McNeely was elected as Chair. Ms Marilia Regini Nutti (Brazil) and Ms Priyanjale K.M. Wijegoonawardane (Sri Lanka) were elected as Vice-Chairs. Mr Fernando Gómez Merino (Mexico) was elected as *Rapporteur*.

V. ADOPTION OF THE AGENDA

7. The Agenda was adopted as given in *Appendix A*.

VI. TARGETING BIOTECHNOLOGIES TO THE POOR

8. The FAO Secretariat presented Section A⁵ of the background document, *Policy options for agricultural biotechnologies in developing countries*, which provided a framework for targeting biotechnologies to the poor, emphasizing the importance of placing biotechnologies

⁴ His statement is in Chapter 14.4 of this book

⁵ Chapter 7 of this book

in the context of wider policies for national agricultural and rural development and science and technology while also stressing the international dimensions of these policies and the importance of priority-setting.

9. The International Technical Conference thanked the Secretariat for the informative document. The Conference noted that the use and adoption of biotechnologies in developing countries is affected by a number of factors, such as the existence or absence of policy and regulatory frameworks for biotechnology, costs, farmer and public awareness of potential benefits of biotechnologies, consumer concerns for food safety and environmental protection, market conditions and product demand and capacity to access and use new biotechnologies. It noted that discussions regarding biotechnologies had often focused on genetically modified organisms, when there were many other biotechnology products in use by farmers, such as biofertilizers and biopesticides, as well as many tools and applications being employed within the agriculture sector.

10. The Conference stressed that diverse situations occur among and within countries as do issues, and that situation analysis of the current use and application of biotechnologies would greatly assist targeting of biotechnologies in developing countries. It also noted that sound biotechnology policies, regulations, management strategies, risk assessments, cost-benefit analysis and communication strategies would contribute to the further development and application of biotechnologies, and that national biotechnologies strategies should be prepared within the overall development strategy context of the country.

11. The Conference noted the need for participatory approaches in advancing consideration of the development and use of biotechnologies. Farmers, farmer organizations, producers, local communities and other stakeholders needed to be fully involved in the processes, and scientists needed to better understand farmer needs and production conditions in undertaking biotechnology research. The Conference stressed that the engagement of smallholder farmers and producers in developing countries was necessary to understand their particular challenges and needs, and to determine appropriate use of biotechnologies to assist small-scale farmers.

12. The Conference noted the importance of integrating modern biotechnologies with traditional knowledge and practices, and that new tools, policies and approaches should help farmers and producers to remain resilient and independent, and to continue their ecologically sustainable practices. It also noted that farmer willingness to adopt new tools and practices depended on their understanding of, and participation in, the resulting benefits,

such as increased production, productivity or, for example, increasing the shelf life of farm products. The Conference emphasized that the intent is for farmers and smallholders to benefit from biotechnologies.

13. The Conference agreed that the further development and application of biotechnologies in many developing countries would benefit from international and regional cooperation and technical and other assistance from international organizations. It noted the need for public research to continue to be supported in order to develop biotechnology tools, products and best sustainable practices, and that national and regional centres of excellence were potential mechanisms for collaboration, and to better focus biotechnology research on the needs of farmers.

VII. SUMMARIES OF PARALLEL SESSIONS OF DAY 1

14. The Conference received summary reports of the results of sector-specific roundtables on case studies of successful applications of biotechnologies in developing countries in crops, livestock, forestry, fisheries and aquaculture, and agro-industry. It also received summary reports of the results of parallel sessions on sector-specific background documents describing the current status and options from biotechnologies in developing countries⁶.

VIII. INVESTING IN AGRICULTURAL RESEARCH AND AGRICULTURAL BIOTECHNOLOGIES

15. Mr Rodney Cooke, Director, Operational Policy and Technical Advisory Division, International Fund for Agricultural Development (IFAD), presented a paper on investing in agricultural research and agricultural biotechnologies⁷. He stressed that the world can ill afford to continue under-investing in agriculture given the levels of food insecurity and poverty and the need for effective adaptation strategies for agriculture in light of the challenges of climate change. Mr Cooke noted the need to focus attention on increasing productivity of smallholders and producers, including women farmers.

16. Mr Cooke stated that while investments in agriculture have proven to be highly effective in reducing poverty, securing consistent levels of funding for agricultural science and technology had been problematic for most developing countries, and this situation needed to be addressed. He stressed that agricultural investment plans must be coherent with overall national plans for economic development and poverty eradication. Mr Cooke called for

⁶ Summary reports from the sessions are available in Chapter 11 of this book

⁷ His paper is in Chapter 14.5 of this book

a farmer-centric participatory approach to agricultural research, whereby the products of strategic and applied research move from trained scientists to farmers in rural communities, and the demands and indigenous knowledge of rural communities flow to the scientists.

IX. ENABLING RESEARCH AND DEVELOPMENT IN AGRICULTURAL BIOTECHNOLOGIES

17. The Conference considered Section B⁸ of the background document, *Policy options for agricultural biotechnologies in developing countries*, which dealt with public policies for fostering appropriate applications of agricultural biotechnologies, including: scientific and technical capacity building; approaches to, and mechanisms for, planning and funding; and requirements to ensure the safe use of agricultural biotechnologies through environmental and food/feed safety regulation. A number of delegates indicated that their countries had already established biotechnology policies and legal frameworks, which included biosafety.

18. The Conference stressed the need for capacity building to enable further development of biotechnology policy and legal frameworks in developing countries. Since many developing countries already have significant experience in developing and implementing biotechnology policies and legal frameworks, the Conference called for further collaboration among developing countries in particular, to share experiences and approaches. The Conference also requested that support be provided by FAO and other relevant international organizations in preparing biotechnology policy and legal frameworks, as requested.

19. The Conference noted that policy and legal frameworks could establish clear approval and monitoring procedures and the responsibilities and competencies for developing and using biotechnology, provide clarity and certainty for developers and users of biotechnology, as well as investors. The Conference noted that biotechnology is rapidly advancing and evolving, and biotechnology policies and regulatory frameworks would require ongoing review and updating to ensure they remain current and enabling.

20. The Conference stressed the need for communication strategies in the preparation and implementation of biotechnology policies and legal frameworks to promote involvement in the preparatory processes and awareness of regulatory and other requirements and responsibilities, and the benefits of biotechnologies.

21. The Conference emphasized the critical need for ongoing scientific training and education to advance biotechnologies in developing countries. Training to update scientists

⁸ Chapter 8 of this book

through workshops, seminars, electronic conferences, science networks and exchanges, and other means would be beneficial. Establishing or enhancing linkages among research institutions and improving information exchange would also be effective means to build capacity, as would using or establishing centres of excellence and convening regional level training initiatives. The Conference noted that quick training responses would sometimes be required, for example, to respond to disease outbreaks affecting agriculture production and productivity.

22. The Conference also saw the need for long-term educational investments to develop the next generation of biotechnology scientists and agriculture extension workers. Incentives might be required to encourage young scientists to undertake research in developing countries to reduce the flow of scientists to developed countries.

23. The Conference indicated that biotechnology capacity building initiatives should take into account existing expertise and facilities, and strategically target country needs and challenges. Delegates indicated several areas for capacity building, including: to enhance legal expertise to prepare, administer and enforce biotechnology laws and regulations; to build capacity in risk assessment and risk management; to better respond to disease outbreaks affecting agriculture production; to advance sustainable agriculture and meet the needs of smallholder farmers and producers; to better utilize endemic species and develop aquaculture resources; and to enhance support for genebanks to assist in conserving genetic diversity as a basic resource for further development of biotechnologies.

24. Taking into consideration a proposal from a representative from civil society, the concern was expressed that genetically modified organisms should not be imposed on farmers in developing countries, in particular if these genetically modified organisms could adversely impact the livelihoods of smallholder farmers.

X. SUMMARIES OF PARALLEL SESSIONS OF DAY 2

25. The Conference received summary reports on the results of parallel sessions on the following cross-cutting issues: Development of genomic resources: Current status and future prospects; Genomic applications: Molecular breeding in developing countries; Enhancing human capacities: Training and education; Ensuring equitable access to technology, including gender issues; Empowering public participation in informed decision-making; Prioritising the role of the farmer; and Public-private partnerships⁹.

⁹ Summary reports from the sessions are available in Chapter 12 of this book

XI. BIOTECHNOLOGIES IN INTERNATIONAL AGRICULTURAL RESEARCH CENTERS

26. Mr Thomas Lumpkin, Director General, International Maize and Wheat Improvement Center, of the Consultative Group on International Agricultural Research (CGIAR), began his presentation by noting the important contributions of the late Norman Borlaug in the Green Revolution and in establishing global agriculture research networks. He provided a brief overview of biotechnology application in CGIAR research, stressing that much more investments in agriculture research and technology are required if we are to meet the challenge of feeding a growing human population, with less land and water, and reduced impacts to the environment.

27. Mr Lumpkin stated that a range of biotechnologies were already in use helping to conserve and characterize genetic resources, enhance agriculture production and productivity, produce vaccines and improve food safety, as examples. He also noted that the further development and use of biotechnologies would need to address a number of issues, such as the use of genetically modified organisms in developing countries, cost effectiveness, and establishing public-private partnerships. Given the potential benefits to agriculture, Mr Lumpkin noted that we must work to address challenges and concerns.

XII. ENSURING ACCESS TO THE BENEFITS OF RESEARCH AND DEVELOPMENT

28. The Conference considered Section C¹⁰ of the background document, *Policy options for agricultural biotechnologies in developing countries*, which dealt with ensuring access to the benefits of biotechnology, and covered the issues of intellectual property rights, public awareness and participation and the roles of extension services. The Conference reiterated the need for effective communication with all stakeholders in advancing the development and use of biotechnologies. Dialogue was essential in order to avoid one-way communication, and various means of communication would need to be employed to reach out to rural people.

29. However, a number of delegates noted that while they had in place biotechnology policies and regulatory frameworks, which include biosafety, ensuring the participation of smallholder farmers and producers in decision-making processes is often difficult, and that empowering local people and identifying community leaders will promote and support effective participation. Lack of access to modern communication means, such as the Internet, and lack of education were cited as challenges to effective involvement in decision-making processes. Lack of resources is also a key impairment to the participation of poor farmers and producers.

¹⁰ Chapter 9 of this book

30. Some delegates indicated success in communicating awareness of opportunities to utilize biotechnologies with their stakeholders. Examples included providing farmers with hands-on experience with biotechnologies, and having them transfer knowledge to other farmers. Extension services in some countries had also proved effective, as had farmer and producer training courses. Stakeholder forums were used to bring together scientists and producers on a regular basis to discuss opportunities and concerns in some countries. The important role of the CGIAR in building capacity in biotechnology was acknowledged, and further assistance from the Centers was requested.

XIII. TECHNOLOGY TRANSFER ASPECTS OF THE MULTILATERAL SYSTEM OF THE INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE; SOUTH-SOUTH COLLABORATION

31. Mr Shakeel Bhatti, Secretary of the International Treaty on Plant Genetic Resources for Food and Agriculture, presented an overview of the International Treaty, which entered into force in 2004. He described the scope of the International Treaty and progress made in its implementation, including the use of a Standard Material Transfer Agreement that is being widely used. Mr Bhatti also reported on technology transfer under the Multilateral System of the International Treaty, and other accomplishments to date. Transfer of germplasm within the system is growing and operational procedures are well established, and a number of local level plant genetic resources projects are being supported through the Funding Strategy of the Treaty.

32. Mr Bhatti noted that the International Treaty provides for the transfer of technologies and associated human capacity building. He stated that implementation of the Treaty would contribute to efforts to adapt to climate change by enhancing the conservation of plant genetic resources, facilitating transfer of technology and by providing funding to developing countries. Mr Bhatti outlined some of the needs to further advance the operation of the International Treaty.

XIV. SUMMARIES OF PARALLEL SESSIONS OF DAY 3

33. The Conference received summary reports on the results of parallel sessions on specific regions: Latin America and the Caribbean; Near East and North Africa; Sub-Saharan Africa; Asia and the Pacific; and Eastern Europe and Central Asia. A number of issue papers were considered in these sessions. Summary reports were also received from parallel sessions dedicated to the following cross-cutting issues: Utilization of plants for non-food use: Challenges

and perspectives; Policy coherence at the regional level; Biosafety in the broader context of biosecurity; Intellectual property rights in agricultural biotechnology; and Conservation and sustainable use of genetic resources for food and agriculture¹¹.

XV. MOVING BEYOND BUSINESS-AS-USUAL: OPTIONS FOR DEVELOPING COUNTRIES; MOVING BEYOND BUSINESS-AS-USUAL: PRIORITIES FOR ACTION FOR THE INTERNATIONAL COMMUNITY

34. The Conference considered the background document, *Agricultural biotechnologies for food security and sustainable development: Options for developing countries and Priorities for Action by the international community*¹². The Secretariat introduced the document, noting that the conclusions of the Conference would greatly assist in advancing discussions on agricultural biotechnologies within the governing bodies of FAO. The Chair of the Conference had prepared Chair's Text with key conclusions from the Conference to facilitate discussion on options for developing countries as well as priorities for action for the international community.

35. The Conference requested that consideration be given to starting a discussion on the establishment of an international agreement on sharing and using animal genetic resources for food and agriculture.

36. The Conference re-emphasized one of the conclusions of the UN Millennium Project, i.e. that science, technology and innovation underpin every one of the Millennium Development Goals.

KEY CONCLUSIONS

37. The International Technical Conference acknowledged that:
- a. Agricultural biotechnologies¹³ encompass a wide-range of tools and methodologies that are being applied to an increasing extent in crops, livestock, forestry, fisheries and aquaculture, and agro-industries, to help alleviate hunger and poverty, assist in adaptation to climate change and maintain the natural resource base, in both developing and developed countries.

¹¹ Summary reports from the cross-cutting and regional sessions are available in Chapters 12 and 13 respectively of this book

¹² Chapter 10 of this book

¹³ The definition is broad and is based on that in Article 2 of the Convention on Biological Diversity, which states that biotechnology is "any technological application that uses biological systems, living organisms, or derivatives thereof, to make or modify products or processes for specific use". The specific kinds of biotechnologies encompassed by the term 'agricultural biotechnologies' are described in the sector-specific documents – Chapters 1 to 5.

- b. The various applications of agricultural biotechnologies have not been widely used in many developing countries, and have not sufficiently benefited smallholder farmers and producers and consumers.
 - c. More research and development of agricultural biotechnologies should be focused on the needs of smallholder farmers and producers.
 - d. Governments need to develop their own national vision and policy for the role of biotechnologies, with options and opportunities examined within the context of national economic, social and rural sustainable development and environmental strategies, objectives and programmes.
 - e. Effective communication and participation strategies are necessary to encourage and promote public involvement and empowerment in decision-making processes, regarding the development and use of biotechnologies.
 - f. Stronger partnerships among and within countries will facilitate the development and use of biotechnologies, including south-south and regional alliances; incorporation of traditional knowledge; and public-private and research partnerships for sharing experiences, information and technologies.
38. The International Technical Conference agreed that:
- a. Developing countries should significantly increase sustained investments in capacity building and development and safe use of biotechnologies; integrated with other agricultural technologies, including traditional knowledge, and maintain the natural resource base to support in particular, smallholders, producers and small biotechnology based enterprises; employing effective participatory approaches for the robust input from stakeholders in decision-making processes.
 - b. FAO and other relevant international organizations and donors should significantly increase their efforts to support the strengthening of national capacities in the development and appropriate use of pro-poor agricultural biotechnologies, and that they be directed to the needs of smallholders, consumers, producers and small biotechnology based enterprises in developing countries.
 - c. Both the lack of policies and regulatory mechanisms as well as overly stringent regulations hinder development of, and access to biotechnologies. Effective and enabling national biotechnology policies and science-based regulatory frameworks can facilitate the development and appropriate use of biotechnologies in developing countries; and ongoing reviews, improvement and harmonization of existing biotechnology policies and regulatory frameworks can keep them current and rational.

XVI. CLOSING REMARKS

39. Mr Modibo Traoré, FAO Assistant Director-General, Agriculture and Consumer Protection Department, began his statement by thanking the Government of Mexico and the State of Jalisco for hosting the Conference and for their generous hospitality. He expressed his appreciation to the organizations that had worked in partnership with FAO to organize and convene the Conference, which had brought together about 300 individuals from 68 different countries. Mr Traoré thanked all of the staff that had worked before and during the Conference to ensure the smooth running of the Conference. He noted that the Knowledge Share Fair had significantly contributed to the Conference, and thanked the 22 organizations that had participated in the Fair.

40. Mr Traoré thanked the delegates and observers for their advice and constructive inputs during the Conference, which resulted in clear and practical conclusions. He noted that the Conference had confirmed that the use of biotechnologies in the crop, livestock, forestry, fishery and agro-industry sectors can contribute to alleviating hunger and poverty and in promoting rural development in developing countries. Mr Traoré observed that the Conference had also underlined that countries are committed to assisting poor smallholders, fishers and forest-dependent populations in developing countries by ensuring that they have access to appropriate biotechnologies that focus on their problems and that they are fully involved in the decision-making processes regarding their development and use.

41. Mr Victor M. Villalobos, Director General, Inter-American Institute for Cooperation on Agriculture, noted that achieving and maintaining food security, in light of a growing human population and climate change, imposed numerous challenges for agriculture. He stated that demand for crops as fuels and other non-food uses and rising prices, also are affecting food security in developing countries, especially for poor rural people.

42. Mr Villalobos stressed that much of agriculture production was not currently sustainable and that this situation must change. Employing sound biotechnologies, he stated, could assist in addressing the global challenges of feeding a growing human population with less inputs and less adverse impacts on the environment. He reminded the Conference that we had faced many other challenges in our past, and now needed to work together to resolve current issues.

43. Mr Villalobos observed that the debate on genetically modified organisms had become polarized. He stated that we cannot afford to abandon the use of genetically modified organisms in agriculture, but that we must use them in a sound manner to assist in achieving our sustainability goals, and without adverse impacts on the environment. To achieve this, he stressed that science-based decision making and convergence of all actors on achieving food security and sustainable agriculture would be key. Mr Villalobos indicated that the Conference had provided valuable advice for the development and use of biotechnologies in developing countries, and that all countries now needed to carefully consider this advice in moving forward.

XVII. CLOSURE OF THE CONFERENCE

44. Mr Salvador Fernández Rivera, Coordinador de Investigación, Instituto Nacional de Investigaciones Forestales, Agrícolas y Pecuarias (INIFAP), on behalf of Mr Mariano Ruiz-Funes Macedo, Subsecretario de Agricultura, SAGARPA, thanked FAO and the other partners for organizing this important Conference in Mexico. He noted that many developing countries have common problems, and that the Conference had indicated the willingness of countries and experts to work together to resolve problems and meet the common global goals of achieving food security, without degrading the natural environment, and to address climate change. Mr Fernández Rivera expressed his satisfaction with the conclusions of the Conference, noted that the work is not yet finalized and hoped that in each country mechanisms could be developed to follow up on the conclusions. He emphasized that each country has to take its own decisions regarding use of agricultural biotechnologies and declared the Conference closed.

APPENDIX A

AGENDA

I. OPENING AND ORGANIZATIONAL MATTERS

1. Opening of the conference
2. Election of the Chairperson and Vice-Chairpersons
3. Adoption of the Agenda and Timetable
4. Appointment of the Rapporteur
5. Introductory remarks by FAO and the Government of Mexico
6. Keynote address

II. PLENARY SESSION 1

7. Targeting biotechnologies to the poor

III. PARALLEL ROUNDTABLES

Presentation and discussion of sector-specific case studies of successful applications of biotechnologies in developing countries

- a. Crops
- b. Livestock
- c. Forestry
- d. Fisheries and aquaculture
- e. Agro-industry

IV. PARALLEL SESSIONS

Presentation and discussion of sector-specific background documents on the current status and options from biotechnologies in developing countries

- a. Crops
- b. Livestock
- c. Forestry
- d. Fisheries and aquaculture
- e. Agro-industry

V. PLENARY SESSION 2

8. Summary - output of Day 1
9. Investing in agricultural research and agricultural biotechnologies
10. Enabling research and development in agricultural biotechnologies

VI. PARALLEL SESSIONS

Cross-cutting issues

- a. Genomic applications (in collaboration with the CGIAR)
- b. Enhancing human capacities: Training and education (in collaboration with the ICGEB)
- c. Ensuring equitable access to technology, including gender issues (in collaboration with Oxfam International)
- d. Empowering public participation in informed decision-making (in collaboration with the International Union for Conservation of Nature [IUCN])
- e. Prioritising the role of the farmer; Public-private partnerships (in collaboration with the International Federation of Agricultural Producers [IFAP])

VII. PLENARY SESSION 3

11. Summary - output of Day 2
12. Biotechnologies in international agricultural research centers (CGIAR presentation)
13. Ensuring access to the benefits of research and development
14. Technology transfer aspects of the Multilateral System of the International Treaty on Plant Genetic Resources for Food and Agriculture
15. South-South collaboration

VIII. PARALLEL SESSIONS

Region-specific discussions

- a. Latin America and the Caribbean (in collaboration with the Inter-American Institute for Cooperation on Agriculture [IICA] and the Technical Cooperation Network on Plant Biotechnology in Latin America and the Caribbean [REDBIO])
- b. Near East and North Africa (in collaboration with the Association of Agricultural Research Institutions in the Near East and North Africa [AARINENA])
- c. Sub-Saharan Africa (in collaboration with the Forum for Agricultural Research in Africa [FARA])
- d. Asia and the Pacific (in collaboration with the Asia-Pacific Association of Agricultural Research Institutions [APAARI])
- e. Eastern Europe and Central Asia

IX. PARALLEL SESSIONS

Cross-cutting issues

- a. Policy coherence at the regional level (in collaboration with the United Nations Conference on Trade and Development [UNCTAD])
- b. Biosafety in the broader context of biosecurity
- c. Intellectual property rights (in collaboration with the World Intellectual Property Organization [WIPO])
- d. Utilisation of plants for non-food uses: Challenges and perspectives (in collaboration with the United Nations Industrial Development Organization [UNIDO])
- e. Conservation and sustainable use of genetic resources for food and agriculture (in collaboration with the CGIAR)

X. PLENARY SESSION 4

16. Summary - output of Day 3
17. Moving beyond business-as-usual: Options for developing countries
18. Moving beyond business-as-usual: Priorities for Action for the international community
19. Adoption of the conference Report
20. Closing remarks
21. Closure of the conference



PRINTED IN ITALY ON ECOLOGICAL PAPER
- JUNE 2011 -

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This book represents the proceedings of the FAO international technical conference dedicated to **Agricultural Biotechnologies in Developing Countries (ABDC-10)** that took place in Guadalajara, Mexico on 1-4 March 2010. A major objective of the conference was to take stock of the application of biotechnologies across the different food and agricultural sectors in developing countries, in order to learn from the past and to identify options for the future to face the challenges of food insecurity, climate change and natural resource degradation.

The proceedings are organized in two main sections. **The first section** contains ten chapters with an extensive series of FAO background documents prepared before ABDC-10. They focus on the current status and options for biotechnologies in developing countries in crops, livestock, forestry, fisheries/aquaculture and food processing/safety, as well as on related policy issues and options, in particular about targeting agricultural biotechnologies to the poor; enabling research and development (R&D) for agricultural biotechnologies; and ensuring access to the benefits of R&D.

The second section contains five chapters dedicated to the outcomes of ABDC-10, namely the reports from 27 parallel sessions of sectoral, cross-sectoral and regional interest, most of which were organized by different intergovernmental and non-governmental organizations and regional fora; keynote presentations; and the conference report adopted by delegates in Guadalajara on the final day.



ISBN 978-92-5-106906-6



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I2300E/1/06.11