

August 2004



منظمة الأغذية  
والزراعة  
للأمم المتحدة

联合国  
粮食及  
农业组织

Food  
and  
Agriculture  
Organization  
of  
the  
United  
Nations

Organisation  
des  
Nations  
Unies  
pour  
l'alimentation  
et  
l'agriculture

Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

E

## Item 5 of the Draft Provisional Agenda

### COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

#### Tenth Regular Session

Rome, 8-12 November 2004

### REPORT FROM FAO ON ITS POLICIES, PROGRAMMES AND ACTIVITIES ON AGRICULTURAL BIOLOGICAL DIVERSITY: (2) CROSS-SECTORIAL MATTERS

#### TABLE OF CONTENTS

		<i>Para.</i>
I.	Introduction	1
II.	FAO Activities in 2003 and 2004	
	1. Sustainable development and genetic resources for food and agriculture	2-10
	2. Economic and social activities	11-18
	3. Nutrition	19-23
	4. Information and Communication activities	24-26
	5. Legal Activities	27-32
III.	Guidance requested from the Commission on Genetic Resources for Food and Agriculture	33

For reasons of economy, this document is produced in a limited number of copies. Delegates and observers are kindly requested to bring it to the meetings and to refrain from asking for additional copies, unless strictly indispensable.  
Most FAO meeting documents are available on Internet at [www.fao.org](http://www.fao.org)

## I. INTRODUCTION

1. The Commission on Genetic Resources for Food and Agriculture regularly receives reports from relevant international organizations, including FAO, on their policies, programmes and activities of relevance to the conservation and sustainable use of genetic resources for food and agriculture. These reports contribute to understanding in this area between FAO and its Commission, and other international organizations, and to the development of appropriate mechanisms for cooperation and coordination.
2. This report provides information on a wide-range of FAO's activities of a cross-sectorial nature, addressing both animal and plant genetic resources. Sectorial activities are addressed in document CGRFA-10/04/10.1. Information on relevant Priority Areas for Interdisciplinary Action (PAIAs) is in document CGRFA-10/04/10.3. Reports submitted by other organizations are in documents CGRFA-9/02/11.1, CGRFA-9/02/11.2 and CGRFA-9/02/11.3.

### 1. Sustainable development and genetic resources for food and agriculture

3. The Sustainable Development Department provides the focal point for biodiversity in FAO with its Assistant Director-General being the main counterpart to the Executive Secretary of the Convention on Biological Diversity, and with the Sustainable Development Environment and Natural Service (SDRN) unit providing the secretariat to the Inter-Departmental Working Group on Biological Diversity. Activities related to this group are reported in Document CGRFA-10/04/10.3.
4. The SDRN continues to host the Secretariat for the Global Terrestrial Observing System (GTOS), which was launched in January 1996 to address data and information needs related to global and regional change in the areas of land quality, freshwater resources, biodiversity, climate change, and pollution. GTOS maintains the Terrestrial Ecosystem Monitoring Sites (TEMS) meta-database, which contains information on 1 200 ecological monitoring sites around the world that carry out long-term monitoring activities. The database contains site information, including 110 variables (biological, physical and chemical), socio-economic data, maps and modules.
5. The Research and Technology Development Service (SDRR) continues to be involved in a number of activities on biotechnology and biosafety. Requests for assistance in the building of national biosafety systems were received from a number of countries. Technical Cooperation Projects have been completed or are currently under implementation in several countries, including Bolivia, Grenada, Kenya, Malaysia, Paraguay and Swaziland, with the technical collaboration of the Extension, Education and Communication Service, the Crop and Grassland Service and the Seed and Plant Genetic Resources Service. Others are in the pipeline, including for, Benin, Côte d'Ivoire, Ghana, Syria and Zambia. Training in biosafety at the national level has been provided in Colombia and Syria.
6. Asian Bio-Net, a regional project financed by Japan, is operational in ten countries, including Bangladesh, China, India, Indonesia, Malaysia, Pakistan, the Philippines, Sri Lanka, Thailand and Vietnam. It contributes to strengthening national capacities in biosafety, organizes workshops and training courses at the national and regional level, promotes regional collaboration and disseminates information through an internet website.
7. The project "Assessment of utilisation and potential of bio-technological advancement for agricultural development in Bangladesh" formulated a comprehensive strategic approach and outlined concrete actions needed to accelerate the process for developing agricultural biotechnology in Bangladesh. A related programme has been submitted to donors for funding. Assistance in biotechnology policy development has been requested by a number of countries,

including Nicaragua, Paraguay and Sri Lanka, and the related project documents are at different stages of formulation. The project in Paraguay is expected to become operational in September 2004.

8. A list of available biosafety training resources has been compiled and posted in the Departmental website (<http://www.fao.org/sd/2003/biosafety/index.htm>). The available training resources are currently being evaluated in order to identify gaps and to set priorities for developing additional training materials. A training manual is under development in collaboration with the Spanish Biosafety Committee and will be published in Spanish.

9. In 2002-2003, four moderated e-mail conferences were hosted by the FAO Biotechnology Forum, covering: gene flow from genetically modified (GM) to non-GM populations; the role and focus of biotechnology in the agricultural research agendas of developing countries; regulation of GMOs in developing countries; and marker assisted selection for crops, forest trees, livestock and fish in developing countries<sup>1</sup>.

10. An inventory of biotechnology techniques and products in the crop sector in use, or in the pipeline in developing countries was prepared in collaboration with Seed and Plant Genetic Resources Service and FAO Waicent. The information is available in a web-based searchable database, FAO-BioDeC ([http://www.fao.org/biotech/inventory\\_admin/dep/default.asp](http://www.fao.org/biotech/inventory_admin/dep/default.asp)) provides current information by country, by crop, by technique and by product. A network of 53 national correspondents (representing 50 countries) has also been established for data validation and updating. Efforts are underway to extend this database to the livestock and forestry sectors. A paper analysing the information contained in the inventory is currently being finalized.

11. Agricultural biotechnology surveys of selected countries of sub-Saharan Africa and of non pre-accession countries of Eastern Europe have been completed. While biotechnologies are being used in all these countries, collaboration between research institutes at the national and regional levels was sparse and in some cases ongoing projects had little relationship to national agricultural priorities and agendas.

## 2. Economic and social activities

12. The main objective of the Economic and Social Department programme of work on the economics of agricultural biological diversity is to provide guidance on implementation of multi-lateral environmental treaties in ways that enhance food security and reduce poverty. Identifying strategies for promoting the sustainable utilization of plant genetic resources is a primary focus of the Department's ongoing work on genetic resources, and will contribute to the implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture, as well as to the programme of work on agricultural biodiversity under the Convention on Biological Diversity.

13. Other areas of the Department's work are focussed on designing incentive measures to promote crop genetic diversity conservation, identifying the determinants of access to crop genetic diversity and associated benefits, and management of agricultural biotechnology for poverty alleviation and improved food security. A key principal guiding the Department's work is the importance of understanding and interacting with agricultural and economic development policies in an effort to promote improved environmental management, together with improved livelihoods.

14. The 2003-4 State of Food and Agriculture (SOFA) report, which is published by the Economic and Social Department, is focussed on the potential of agricultural biotechnology to address the needs of the world's poor. The report contains an in-depth analyses of several aspects of agricultural biotechnology in relationship to poverty alleviation, including a definition of the

---

<sup>1</sup> In preparation for this final e-mail conference, the international workshop "*Marker Assisted Selection: a fast track to increase genetic gain in plant and animal breeding?*" was organized in Turin in collaboration with the local University and the Fondazione per le Biotecnologie, with the participation of outstanding scientists from all over the world.

technologies biotechnology encompasses, changes in agricultural research and development from the green to the gene revolution, evidence on the economic impacts of transgenic crop adoption and the health and environmental impacts, public attitudes towards agricultural biotechnology and the reforms in research policy and capacity building necessary to ensure the benefits of biotechnology can reach the rural poor. The report is available on the FAO website.

15. One major area of the Economic and Social Department's programme on agricultural biodiversity is the seed sector and its relationship to crop genetic diversity. The seed sector is a critical nexus between agricultural development and crop diversity conservation, but until now has been the subject of very little economic research. Beginning in 2001, the Economic and Social Department launched a programme on assessing the relationship between seed systems and the on-farm utilization of crop genetic diversity, funded by the FAO Netherlands partnership programme. The activities of this programme in the Economic and Social Department have been reported on in previous Commission reports (CGRFA-9/02/14.2). Since then, considerable work has been completed under the programme in the form of workshops to discuss research findings, data collection, analysis, publications and presentations to policy-makers. The publications that have been generated under this programme of work are available on the FAO website under [http://www.fao.org/biodiversity/econom\\_en.asp](http://www.fao.org/biodiversity/econom_en.asp) (for FNPP funded project publications) and [http://www.fao.org/es/ESA/en/res\\_nrm.htm](http://www.fao.org/es/ESA/en/res_nrm.htm).

16. The outputs of this work programme include methodology development (e.g. survey instruments, manuals, guidelines for designing seed system studies), publications based on empirical analyses (e.g. ESA working papers on: *Determinants of cereal diversity in communities and on household farms of the northern Ethiopian highlands; Assessing the links between seed systems, farmer welfare and genetic diversity in Ethiopia; Transactions costs and utilization of maize in small-holder maize systems Oaxaca Mexico; Millet Diversity and Seed Systems: A Case Study in Andhra Pradesh and Karnataka, India*), publications based on theoretical work (*Agricultural biodiversity, biotechnology and development: seeds of change edited volume 2004*) workshops for policy-makers (*Seed systems, diversity and emergency response: presentation to Ethiopian emergency consultative group February 2004*) and researchers (*Uma análise econômica dos sistemas de sementes: presentation to the workshop on informal seed production systems for small producers in Latin America*).

17. One of the most significant results that emerged from the research programme was the importance of markets as a source of seed access, for both traditional and modern crop varieties, as well as both low and high income groups. Markets also have emerged as an important source of access in times of crisis. At the same time, research findings have also indicated that market integration is almost always negatively associated with on farm diversity levels – and the effect is quite significant. Clearly, better understanding of markets and the relationship to access and diversity is necessary to assist policy development.

18. To this end the Economic and Social Department is launching a new research programme entitled: "*Markets as a means of accessing crop genetic services and conserving agricultural biodiversity*". A workshop was held at FAO headquarters on April 1 and 2 to inaugurate the programme. The workshop report is available at: [http://www.fao.org/es/ESA/en/res\\_nrm.htm](http://www.fao.org/es/ESA/en/res_nrm.htm). The purpose of the workshop was to initiate a collaborative research programme with several CG centers as well as other institutions, on assessing the links between markets, access to crop genetic resources and genetic diversity conservation. The workshop was attended by representatives from IPGRI, IFPRI, CIMMYT, ICRISAT, CIP and CIAT, as well as staff from IFAD and FAO. All of the CG center participants have indicated their willingness to participate in this research effort and the Economic and Social Department is currently in the process of designing the research programme, which is planned to begin in 2005.

19. Guidance is requested from the Commission on the design and content of the research programme on "*Markets as a means of accessing crop genetic services and conserving agricultural biodiversity*". The Commission is also requested to provide advice on how the

Department can enhance efforts to provide information to policy-makers responsible for promoting the sustainable utilization of plant genetic resources.

### 3. Nutrition

20. The Nutrition Planning, Assessment and Evaluation Service (ESNA) within the Economic and Social Department, recognizes the importance of agricultural biodiversity and its links to nutrition and has developed and implemented a number of activities related to this emerging area. In the area of food composition, ESNA operates the Global Secretariat for the International Network of Food Data Systems (INFOODS). The importance of identifying the cultivar-specific nutrient profiles of food plants and animals is recognized and promoted through the INFOODS Regional Data Centres. Uncultivated and lesser-known cultivars have always represented an important resource, particularly for micronutrients, that may be exploited to contribute to nutritional adequacy. Although technical progress in agriculture has managed to increase dietary energy supply worldwide in the past decades, yet extremely high prevalence of micronutrient deficiencies exist in both developed and developing countries. 840 million people remain hungry around the world, and still more suffer from micronutrient deficiencies. Recent compositional research has provided data to confirm the micronutrient superiority of these cultivars over some of the more widely-utilized cultivars. The analysis of nutrient content of under-utilized crops and local varieties could become an important tool to promote the sustainable utilization of these plant genetic resources for food and agriculture. Systematic cultivar-specific nutrient analysis and data dissemination could support the implementation some of the priority activity areas of the FAO Global Plan of Action for the Conservation and Sustainable Utilization for Food and Agriculture. Furthermore, improving the knowledge of the nutrient composition of the farm animal diets is also important to enhance the sustainable management of some local farm animal breeds.

21. Compositional analysis of biodiversity also supports other activities related to genetic resources for food and agriculture. For example, the ability to assess “substantial equivalence” in Genetically Modified Organisms requires compositional data on the existing biodiversity of that food.

22. ESNA participated in the 20<sup>th</sup> Session of the FAO intergovernmental International Rice Commission presenting a paper on the nutritional contribution of rice and impacts of biotechnology and biodiversity in rice-consuming countries, which suggested important directions for food composition data generators and compilers. The Rice Commission recommended that: *“existing biodiversity of rice varieties and their nutritional composition need to be explored before engaging in transgenics; nutrient content needs to be among the criteria in cultivar promotion; cultivar-specific nutrient analysis and data dissemination should be systematically undertaken.”* These recommendations have been presented by ESNA in published papers and at scientific conferences, as a useful model at the interface of nutrition, biodiversity and biotechnology.

23. Some areas of future work related to biodiversity and nutrition include the following: the INFOODS Secretariat will assist the regional data centres to produce more cultivar-specific data; the Food Composition post-graduate training courses will include a lecture on composition and biodiversity/biotechnology; a series of posters will be prepared to celebrate the diversity in indigenous foods and will present nutrient data; in collaboration with FAO’s Fisheries Department, a workshop and technical consultation on aquatic biodiversity and nutrition will be convened; a paper on biodiversity will be given at the 6<sup>th</sup> International Conference on Dietary Assessment Methods; and a paper will be presented on cultivar-specific nutrient data at the 6<sup>th</sup> International Food Data Conference.

24. The Commission is requested to provide guidance on how FAO could best support countries to generate, compile and disseminate cultivar-specific nutrient composition data, as well as indicate the relative priority of obtaining cultivar-specific dietary consumption data in order to demonstrate the role of biodiversity in nutrition and food security.

#### 4. Information and Communication Activities

25. The Information Division produced and disseminated a range of materials relevant to genetic resources for food and agriculture to a global audience. In particular, the following News Releases were drafted, disseminated and posted on the FAO Web site: Protecting the planet's plant genetic resources (03/12/2003, about a side-event at FAO conference); A Treaty on biodiversity to become law (31/03/2004); The loss of domestic animal breeds alarming (31/03/2004); and Biodiversity for food security (announcing World Food Day 2004, 20/05/2004).

26. FAO's Multimedia Production Unit produced a series of six videos on biodiversity. Stories of survival, progress and everyday life in Chad, Ethiopia, Cambodia and Peru illustrate the fundamental interdependence between people and their natural environment. The videos are available in English, French, Spanish, Arabic and Italian.

27. The Information Division was involved in the production of the third volume in the FAO Ethics Series, entitled *The Ethics of sustainable agricultural intensification*, which will be published in all five FAO languages in 2004.

28. Each year on 16 October, the FAO celebrates World Food Day, commemorating the date of its founding in 1945. The theme for World Food Day and TeleFood campaign for 2004 is "Biodiversity for Food Security". It highlights biodiversity's role in ensuring that people have sustainable access to enough high-quality food to lead active and healthy lives. World Food Day activities are organized mainly by participating countries. It is observed every year in more than 150 countries. Most countries have established National Committees to promote, plan and execute activities at national level. The Commission will receive an update on the activities and outcomes of the World Food Day "Biodiversity for Food Security" at the Tenth Regular Session.

#### 5. Legal Activities

29. Through the Regular and Field Programmes, the Legal Office provides technical assistance, regionally and nationally, in the formulation of legislation in the field of genetic resources for food and agriculture and related matters.

30. In 2003 the Legal Office developed a technical cooperation project on *Legal Assistance to In-situ Conservation of Crop Wild Relatives*. The objective of the project is to assist the Governments of Armenia, Bolivia, Madagascar, Sri Lanka and Uzbekistan in the development of appropriate legal frameworks for the protection of their genetic resources, with particular emphasis on conservation and utilisation of CWRs. The project also aims to ensure that these legal frameworks are suitable for the sustainable conservation of the biological diversity of the countries consistent with the international legal framework. The project implementation started in the last quarter of 2003, and will continue through 2004.

31. Over the last two years, the Legal Office has been involved in inter-departmental work as part of the Priority Areas for Interdisciplinary Action (PAIA) on biotechnology and biosecurity. The Legal Office is part of an integrated programme of activities to build capacity for biotechnology, food quality and safety and zoosanitary standards. The development of regional and national capacity building on regulatory and legal aspects of biotechnology in food and agriculture is the aim of a number of technical cooperation projects, which are being implemented or are in the approval process phase.

32. In 2003, the Legal Office published *Law and modern biotechnology: Selected issues of relevance to food and agriculture*, by L. Glowka, in its Legislative Studies series. This 172-page study reviews and assesses international and regional legal instruments as well as selected national laws related to biotechnology. Three categories of legal texts, namely those dealing with biosafety, food safety and consumer protection are considered. The study addresses issues such as

---

public participation in the policy-making and decision-making processes, as well as the development of oversight mechanisms.

33. In 2003 the Legal Office produced a legal study on *The Legal Framework for the Management of Animal Genetic Resources*, by A. Ingrassia, which will be published in the FAO Legislative Studies series. The study examines the national and international legal framework applicable to the conservation and sustainable use of farm animal genetic resources. In order to identify the relevant national legislation, a questionnaire was sent to National Coordinators, Chairs and Technical Secretaries of the National Consultative Committees responsible for preparation of Country Reports for the first Report on the *State of the World's Animal Genetic Resources*. A condensed version of the study is provided as Background Study Paper to this Session of the Commission.

34. The Legal Office has continued to improve FAOLEX, its comprehensive computerized legislative database. Numerous legal texts pertaining to FAO's mandate, including plant genetic resources, seeds and plant variety protection, have been included and summarized.

## **II. GUIDANCE REQUESTED FROM THE COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE**

35. The Commission may wish to express its views on the policies and activities provided in this document and make suggestions so that the relevant technical units can take these into consideration when carrying out their current task, and to assist when planning for the future.