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**FAO GLOBAL SYSTEM FOR PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE**

At the request of the Secretariat of the Food and Agriculture Organization of the United Nations, the report on the FAO Global System for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture, contained in annex, is made available to assist the second meeting of the Conference of the Parties in the consideration of item 5.9 of its medium term programme of work: *Relationship with the FAO Global System for Plant Genetic Resources for Food and Agriculture.*



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para la
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y la
Alimentación

**REPORT BY THE
FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
TO THE SECOND MEETING OF THE CONFERENCE OF THE PARTIES
TO THE CONVENTION ON BIOLOGICAL DIVERSITY**

(Indonesia, 6 - 17 November 1995)

Agenda Item 8.3

**REPORT ON THE FAO GLOBAL SYSTEM
FOR THE CONSERVATION AND UTILIZATION
OF PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE**

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REPORT ON
THE FAO GLOBAL SYSTEM FOR THE CONSERVATION AND UTILIZATION OF
PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

REPORT TO THE SECOND MEETING OF THE CONFERENCE OF THE PARTIES
TO THE CONVENTION ON BIOLOGICAL DIVERSITY

I. INTRODUCTION

1. Agenda 21 of the United Nations Conference on Environment and Development (UNCED) recommended that the Global System be strengthened and reviewed, in harmony with the Convention on Biological Diversity. The Food and Agriculture Organization of the United Nations (FAO) has taken a number of relevant actions: (i) the International Undertaking is being revised by countries, in the Commission on Plant Genetic Resources, in accordance with FAO Conference Resolution 7/93; (ii) two major elements of the Global System (the Report on the State of the World's Plant Genetic Resources and the Global Plan of Action) are being developed in the context of the preparation for the Fourth International Technical Conference on Plant Genetic Resources; and (iii) the International Network of *ex situ* collections under the auspices of FAO has been established by agreements negotiated between countries, or relevant international organizations, and FAO. Other components of the Global System of relevance to the Convention have also recently been strengthened.

2. This is the latest in a series of reports submitted by the FAO to bodies of the Convention on Biological Diversity, on its activities in support of the Convention¹. FAO submitted reports to both sessions of the Intergovernmental Committee on the Convention on Biological Diversity (ICCBD) as well as to the First Session of the Conference of the Parties (CoP). There was strong support in the ICCBD for the renegotiation process of the International Undertaking, and the CoP included the following item in its Medium-term Programme of Work:

"5.9 Relationship with the FAO Global System for Plant Genetic Resources for Food and Agriculture

- 5.9.1 To be informed and to be able to consider progress made revising the International Undertaking on Plant Genetic Resources for Food and Agriculture in order to consider its consistency with the objectives and provisions of the Convention and implementation of Resolution 3 of the Nairobi Final Act;
- 5.9.2 To be informed about and to be able to consider the preparation for the forthcoming International Technical Conference on the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture in 1996;
- 5.9.3 To be informed about developments with regard to *ex situ* collections of plant genetic resources."

This has subsequently been reflected in Item 8.3 of the Agenda of the Second Session of the Conference of the Parties.

¹ Particularly in relation to Resolution 3 of the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity, on *The Interrelationship between the Convention on Biological Diversity and the Promotion of Sustainable Agriculture*, which "recognizes the need to seek solutions to outstanding matters concerning plant genetic resources within the [FAO] Global System."

3. The FAO Commission on Plant Genetic Resources, during its Sixth Session (19-30 June 1995), discussed FAO's Cooperation with the Convention on Biological Diversity. It "expressed satisfaction at the cooperation developing between FAO and the Secretariat of the Convention on Biological Diversity" and "requested that the report of its [Sixth] Session be transmitted to the Secretariat of the Convention on Biological Diversity, for the information of the next session of the Conference of the Parties to the Convention, and that the Chairman of the Commission should, on that occasion, speak on the Global System and the work of the Commission². The Commission considered that the Global System and its components, including the World Information and Early Warning System (WIEWS), the Report on the State of the World's Plant Genetic Resources and the Global Plan of Action, should be highlighted as valuable inputs to the work of the Convention's Secretariat".

4. This document provides information on the Global System and its components. Separate sections of the document address current developments affecting the Global System as identified in item 5.9 of the Medium-term Programme of Work and in Item 8.3 of the Agenda of the Second Session of the Conference of the Parties.

II. THE FAO GLOBAL SYSTEM

Background

5. In 1983, the FAO Conference decided to establish a permanent intergovernmental forum: the Commission on Plant Genetic Resources. It also adopted a formal framework: the International Undertaking on Plant Genetic Resources. The Commission has since coordinated, overseen and monitored the development of a Global System for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture. (The diagram on the following page shows the components of the Global System, and the relationship between them).

6. The objectives of the Global System are to ensure the safe conservation and promote the availability and sustainable utilization of plant genetic resources, for present and future generations, by providing a flexible framework for sharing the benefits and burdens. The System covers the conservation (*ex situ* and *in situ*, including on-farm) and utilization of plant genetic resources for food and agriculture.

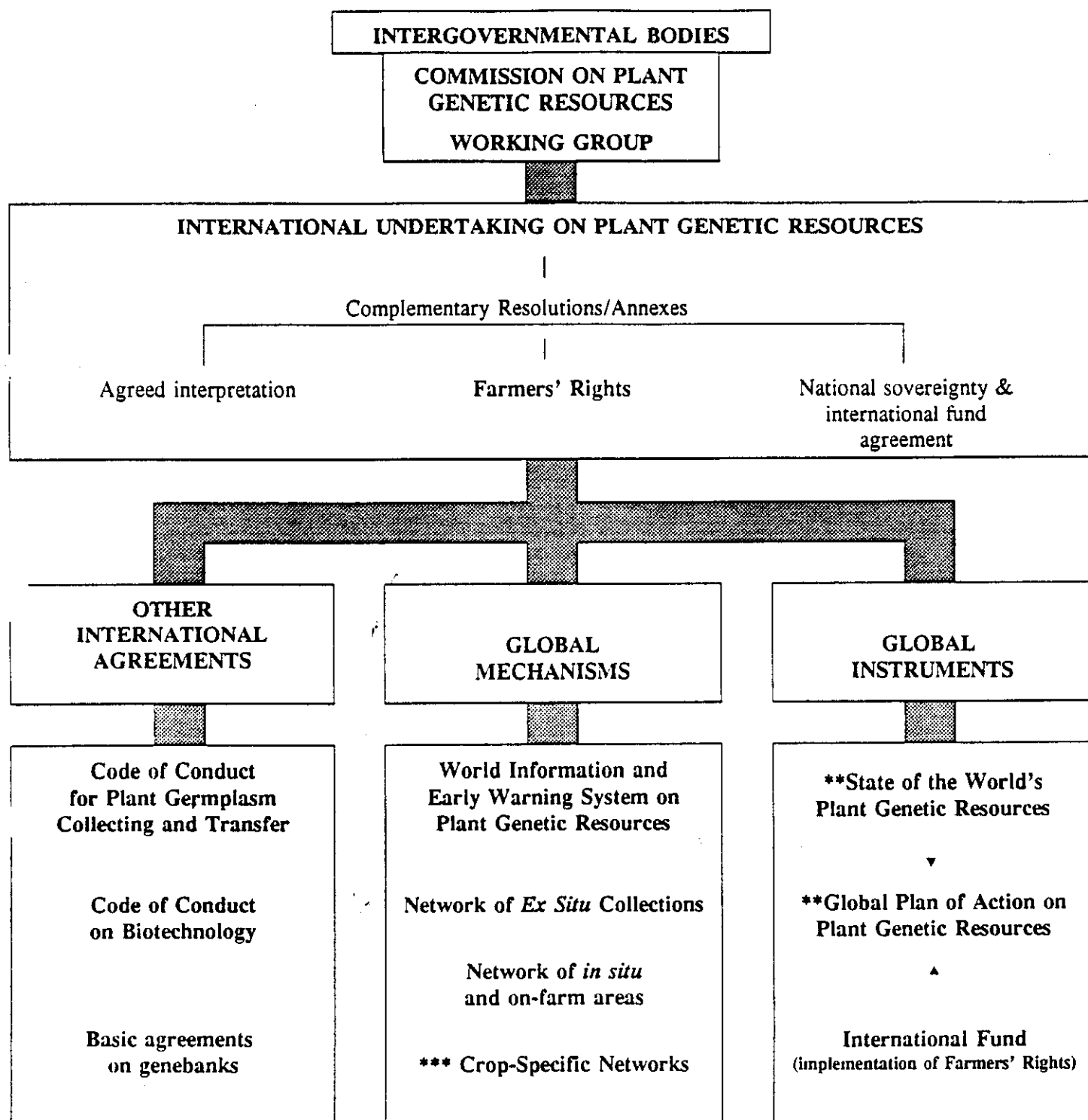
7. The Global System is based on the principles that:

- nations have sovereign rights over the plant genetic resources in their territories;
- plant genetic resources should be available for the benefit of all humanity, on mutually agreed terms, for plant breeding and scientific purposes;
- plant genetic resources, and the information, technologies and funds necessary to conserve and utilize them, are complementary;
- all nations are potential donors and users of plant genetic resources, information, technology and funds;
- the best way to guarantee the maintenance of plant genetic resources is to ensure their effective, sustainable and beneficial utilization, in all countries;
- the farmers of the world have, over the millennia, domesticated, conserved, developed, improved and made available plant genetic resources and continue to do so today;
- advanced technologies and local rural technologies are both important and complementary, for the conservation and utilization of plant genetic resources;

² "The Commission also requested that the report of its current session be transmitted to the first meeting of the Convention's Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), to assist it in preparing the contribution of the Convention on Biological Diversity to the Fourth International Technical Conference". This has been done, and a document entitled *The Fourth International Technical Conference on Plant Genetic Resources: report on the preparatory process and the expected outputs* was also

- *in situ* and *ex situ* conservation are complementary strategies for maintaining genetic diversity.

THE GLOBAL SYSTEM FOR THE CONSERVATION AND UTILIZATION OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE*



* For illustrative purposes only.

** The first State of the World and Global Plan of Action on Plant Genetic Resources are being produced during the preparatory process for the Fourth International Technical Conference on Plant Genetic Resources.

* This element has been added since June 1995, following the request of the Sixth Session of the Commission.

8. One hundred and forty-eight countries and the European Community are now (August 1995) formally part of the System, through having joined the Commission, adhered to the Undertaking, or both (see *Appendix 1*).

The Commission on Plant Genetic Resources: the intergovernmental forum

9. The Commission on Plant Genetic Resources was established on the basis of Resolution 9 of the 1983 FAO Conference. It is a unique global intergovernmental forum, where countries that are donors and users of germplasm, funds and technology can discuss, on an equal footing, matters related to plant genetic resources for food and agriculture and monitor the implementation of the principles contained in the Undertaking. Through its debates, the Commission aims to reach international consensus in areas of global interest. Relevant technical assistance agencies, intergovernmental organizations, development banks, non-governmental organizations and private foundations also attend the sessions of the Commission and report to it on their programmes and activities on plant genetic resources. In 1985, the Commission established a subsidiary intergovernmental Working Group, which provides guidance to the Secretariat on the implementation of the Commission's recommendations.

The International Undertaking on Plant Genetic Resources: the framework agreement

10. The International Undertaking on Plant Genetic Resources³ is a non-legally binding instrument, adopted by Resolution 8 of the 1983 FAO Conference, and complemented by three negotiated Conference Resolutions (4/89, 5/89 and 3/91), which are now annexes to the Undertaking: they introduced the concepts of Farmers' Rights, national sovereignty over plant genetic resources and an international fund for the implementation of Farmers' Rights.

11. In November 1993, the Twenty-seventh Session of the FAO Conference unanimously adopted, as Resolution 7, a text that had been negotiated by the Fifth Session of the Commission, calling for the revision of the Undertaking, in harmony with the Convention on Biological Diversity. The Resolution requested that the revision of the Undertaking be negotiated by countries, through regular and extraordinary sessions of the Commission and its Working Group. A report on the status of these negotiations is given in Section III below.

The International Code of Conduct for Plant Germplasm Collecting and Transfer

12. The International Code of Conduct for Plant Germplasm Collecting and Transfer negotiated by countries in the Commission on Plant Genetic Resources, and adopted by the FAO Conference in 1983, as Resolution 8/83, provides a framework which governments may use in developing their national regulations or formulating bilateral agreements on the collection of germplasm for food and agriculture under conditions they determine. The Code is in line with, and fully compatible with, both the Convention on Biological Diversity and the Undertaking. The Code was adopted as a voluntary agreement, on the understanding that it might be revised by the Commission to reflect new developments and circumstances.

The Draft Code of Conduct on Biotechnology

13. In 1989, the Commission requested the development of a draft Code of Conduct for Biotechnology, as it affects the conservation and use of plant genetic resources for food and agriculture, which was considered at its Fifth Session in 1993. The draft Code includes provisions to maximize the positive effects of biotechnology and minimize potentially negative effects, as well as to promote access to relevant agro-biotechnologies and to the plant genetic resources for food and agriculture to which they are applied. The Commission recommended that the biosafety component of the preliminary draft

³ The number of countries that have now adhered to the Undertaking is 110.

Code be considered an input to the work of the governing body of the Convention on Biological Diversity on this subject and "that FAO participate in this work, in order to ensure that the aspects of biosafety in relation to plant genetic resources for food and agriculture are appropriately covered". The Commission's recommendations were endorsed by the Twenty-seventh Session of the FAO Conference. FAO transmitted the biosafety component of the draft Code to the Secretariat of the Convention on Biological Diversity as an input to its discussions on a possible biosafety protocol to the Convention. In its turn, the first Session of the Conference of the Parties requested its Secretariat to invite FAO to assist in the establishment of an open-ended intergovernmental group of experts, that met in Spain in July 1995, to discuss this possible protocol.

14. The Sixth Session of the Commission (19-30 June 1995) requested that cooperation continue between FAO and the Secretariat of the Convention on Biological Diversity, on the possible development of a protocol on biosafety, and requested that document CPGR-6/95/15, *Recent international developments of relevance to the draft Code of Conduct for plant biotechnology*, be transmitted to the Secretariat of the Convention on Biological Diversity, as an information document, "particularly for its relevance to the Conference's current consideration of bio-safety issues."

The Network of *Ex Situ* Collections: international agreements on genebanks

15. The Network of *Ex Situ* Collections under the Auspices and/or Jurisdiction of FAO is being developed, in implementing Article 7 of the Undertaking, with the technical assistance of the International Plant Genetic Resources Institute (IPGRI). A report of the current status of the network is given in Section V below.

The Network of *in situ* Conservation Areas

16. There has been little concrete progress in the establishment of the *in situ* network requested by the Commission, which would cover the "on-farm" conservation of crops and *in situ* conservation of wild relatives of cultivated plants. The Sixth Session of the Commission recommended that the agenda of the 1997 FAO Worldwide Technical Consultation on Protected Areas include a review of the role of protected areas in the *in situ* conservation of the full range of plant and animal genetic resources (including wild crop relatives), and that it help identify technical criteria for the establishment of the network and develop guidelines in this respect. The Global Plan of Action being prepared within the context of the Fourth International Conference on Plant Genetic Resources will also advance the development of the network.

The World Information and Early Warning System: facilitating exchange of information and technology

17. The World Information and Early Warning System (WIEWS) on Plant Genetic Resources for Food and Agriculture was established in conformity with Articles 7.1 (e) and (f) of the International Undertaking. The WIEWS collects, disseminates and facilitates the exchange of data and information on plant genetic resources and related technologies. It is also intended to rapidly alert the international community to hazards threatening the loss of *ex situ* and *in situ* plant genetic resources for food and agriculture, so as to make remedial action possible.

18. UNCED's Agenda 21 requested FAO to accelerate the development of the WIEWS. Currently, the *ex situ* database contains data on over 4.5 million plant genetic accessions, held in some 1,220 *ex situ* collections around the world. The country profile database contains information on the structure and national plant genetic resource programmes and activities of over 190 countries. The seed sources database contains the addresses of about 8000 seed-supplying institutions around the world, as well as data on activities and crop coverage. The crop variety database contains information on commercial crop varieties. The database of databases provides information on individual non-FAO databases and

19. The data maintained in the WIEWS provides a major input to the preparation of the periodic report on the State of the World's Plant Genetic Resources. The Sixth Session of the Commission suggested that FAO and the Secretariat of the Convention on Biological Diversity work together on the possible access by the Clearing House Mechanism to the WIEWS databases⁴.

Crop-related networks

20. A number of global and regional crop-related networks covering a large variety of cultivated species, being established in close collaboration with FAO Regional Offices and relevant scientific organizations, promote a coordinated approach to identifying, conserving and evaluating the genetic resources of selected crop species, with the aim of their utilization for the improvement of cultivars, and adaptation to farmers' needs. The Sixth Session of the Commission recognized that the crop-related networks were a useful approach to integrating activities on plant genetic resources within the Global System and strengthening practical linkages between the conservation and utilization of crop genetic resources at field level.

Periodic Reports on the State of the World's Plant Genetic Resources: facilitating the Commission's monitoring function

21. The Third Session of the Commission "*recommended* that the Secretariat should periodically prepare a report on the State of the World's Plant Genetic Resources, with the cooperation of other bodies concerned. The report should analyze the current plant genetic resources situation, and describe activities and programmes being carried out by regional, international and non-governmental organizations, with the aim of identifying gaps, constraints and emergency situations; this would allow the Commission to recommend priorities and ways of harmonizing the overall effort."

22. The first Report on the State of the World's Plant Genetic Resources is currently being prepared through a country-driven process leading to the Fourth International Technical Conference, a report of which is in Section IV.

The Global Plan of Action: facilitating the Commission's coordinating function

23. The Commission requested the development of a rolling Global Plan of Action on Plant Genetic Resources for food and agriculture, with programmes and activities aimed at filling in gaps, overcoming constraints and facing emergency situations identified in the Report on the State of the World's Plant Genetic Resources. The periodically updated Plan will permit the Commission to recommend priorities and to promote the rationalization and coordination of efforts.

24. The first Plan of Action is being developed, under the guidance of the Commission, in the context of the Fourth International Technical Conference on Plant Genetic Resources on the basis of the first State of the World Report, through a country-driven process, including regional and sub-regional meetings. Further information is provided in Section IV.

The International Fund for Plant Genetic Resources: ensuring funding

25. Following negotiations carried out through the Commission on Plant Genetic Resources, the FAO Conference in 1991 unanimously adopted Resolution 3 which agreed "that Farmers' Rights will be implemented through an international fund on plant genetic resources, which will support plant genetic conservation and utilization progress". The Resolution also agreed that the International Fund "should be substantial, sustainable and based on the principles of equity and transparency" and "that

⁴ It also provides useful information for survey and analysis, such as the *Survey of existing data on ex situ collections of plant genetic resources for food and agriculture*, that was presented to the Sixth Session of the Commission.

through the Commission on Plant Genetic Resources, the donors of genetic resources, funds and technology will determine and oversee the policies, programmes and priorities of the fund and other funding mechanisms, with the advice of the appropriate bodies".

26. The International Fund is expected to become a key mechanism for sharing benefits and a critical element in ensuring the equitableness of the Global System. The Fund will provide a channel for countries, intergovernmental and non-governmental organizations, private industry and individuals to support conservation and promote the use of plant genetic resources for food and agriculture on a sustainable basis, at all levels. The Fund has not yet been established and matters related to the legal status, policies and priorities, and parties are still under discussion, as part of the current negotiations for the revision of the International Undertaking. Progress in the establishment and operation of the International Fund is dependent on the success of the negotiations among countries on the revision of the International Undertaking, which includes the realization of Farmers' Rights. The development of the Global Plan of Action will contribute to determining the actual magnitude of the financial needs. A number of documents prepared by the Secretariat to facilitate current negotiations were presented to the Sixth Session of the Commission.⁵

III. NEGOTIATIONS FOR THE REVISION OF THE INTERNATIONAL UNDERTAKING ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Context and Background

27. The International Undertaking was adopted by the FAO 1983 Conference as Resolution 8/83, with reservations by eight countries.⁶ It was the first comprehensive international agreement concerning plant genetic resources. It seeks to "ensure that plant genetic resources of economic and/or social interest, particularly for agriculture, will be explored, preserved, evaluated and made available for plant breeding and scientific purposes". The implementation of the Undertaking is monitored by the Commission. Currently, 110 countries have adhered to the Undertaking.

28. In order to meet the concerns of the countries that had expressed reservations, the Undertaking has been qualified and interpreted by a number of FAO Conference Resolutions unanimously adopted in 1989 and 1991. The first such resolution (4/89) recognized that Plant Breeders' Rights, as provided for by the Union for the Protection of New Varieties of Plants (UPOV) Convention of 1978, were not inconsistent with the Undertaking. It simultaneously recognized "Farmers' Rights", which were defined in a second resolution (5/89). The third resolution (3/91) recognized the sovereign rights of nations over their genetic resources, and agreed that Farmers' Rights will be implemented through an international fund for plant genetic resources. The third resolution also agreed "that breeders' lines and farmers' breeding material should only be available at the discretion of their developers during the period of development". This process has sought to achieve and maintain a balance between access to the new products of biotechnology (commercial varieties and breeders' lines) on the one hand, and farmers'

⁵ Document CPGR-6/95/8, "Revision of the International Undertaking on Plant Genetic Resources. Issues for consideration in Stage II: access to plant genetic resources, and Farmers Rights (especially para. 14 and 24-55) provided details on the current status of negotiations related to the establishment of the Fund and identified questions to be resolved. These include the nature of the funding (voluntary or mandatory); the question of linkage between the financial responsibilities and the benefits derived from the use of PGR and the question of who should bear financial responsibilities (countries, users or consumers). They also include how the relative needs and entitlements of beneficiaries, especially developing countries, are to be estimated and how farmers and local communities may benefit from the funding. Document CPGR-6/95/8 Supp., *Revision of the International Undertaking on Plant Genetic Resources. Analysis of some technical, economic and legal aspects for consideration in Stage II*, (especially para. 7-18 and 24-32, as well as Appendices I and III) and a number of Background Study papers provided the Commission with technical information on and analysis of the economic and legal aspects, including possible options, as the basis for negotiations towards resolution of the pending issues related to the establishment and operation of the Fund. The institutional aspects of the Fund are discussed in document CPGR-6/95/9, *Revision of the International Undertaking on Plant Genetic Resources. Stage III - Legal and institutional matters* (especially in para. 23-25).

varieties and wild material on the other, and the interests of developed and developing countries, by balancing the rights of breeders (formal innovators) and farmers (informal innovators).

29. The 1991 FAO Conference, which endorsed Resolution 3/91, in recognizing "the important consensus reached on a number of delicate issues such as sovereignty over plant genetic resources, access to breeders' and farmers' material and implementation of Farmers' Rights through an international fund", also recognized that "other relevant matters, such as conditions of access to plant genetic resources and the nature and size of the fund, needed to be further discussed and negotiated in the light of the decisions on access to biodiversity and funding mechanisms of the 1992 UN Conference on Environment and Development".

30. In May 1992, Resolution 3 of the Nairobi Final Act identified access to *ex situ* collections not acquired in accordance with the Convention and Farmers' Rights as outstanding issues not addressed by the Convention, and recognized that solutions should be sought within the FAO Global System on Plant Genetic Resources. Background information, summary analysis, and the identification of matters to be resolved on each of these issues, were provided by FAO to the First Conference of the Parties.⁷ In June 1992, UNCED called for the strengthening of the FAO Global System on Plant Genetic Resources, and its adjustment in line with the Convention on Biological Diversity, as well as for the realization of Farmers' Rights.

31. In following up these matters, the FAO Conference, at its Twenty-seventh Session, in November 1993, unanimously adopted Resolution 7/93, "Revision of the International Undertaking on Plant Genetic Resources" (see *Appendix 2*), which requested the Director-General to provide a forum for negotiations among governments for:

- the adaptation of the International Undertaking on Plant Genetic Resources, in harmony with the Convention on Biological Diversity⁸;
- consideration of the issue of access on mutually agreed terms to plant genetic resources, including *ex situ* collections not addressed by the Convention⁹; and
- the issue of the realization of Farmers' Rights.

32. The Resolution urged that the process be carried out through the Commission on Plant Genetic Resources, with the help of its Working Group, in close collaboration with the Governing Body of the Convention on Biological Diversity, and recognized the importance of mutual reporting in these matters between the Commission and the governing body of the Convention.

33. As reported in the introduction to this document, FAO has regularly reported to the Convention. In the Intergovernmental Committee on the Convention, there was strong support for the negotiating process of the revision of the International Undertaking, and for bringing the revised Undertaking within the framework of the Convention, possibly in the form of a protocol. The meeting of the Conference of the Parties has included this subject in its Medium-term Programme of Work, within Item 5.9.

34. The Fifth Session of the Commission considered that "the revision of the International Undertaking should be conducted carefully, as a gradual pragmatic and step-by-step process, building

⁷ UNEP/CBD/COP/1/Inf.3

⁸ While the Convention on Biological Diversity covers all kinds of biological diversity, the scope of the Undertaking is limited to plant genetic resources for food and agriculture.

⁹ It should be noted that this formulation, adopted after careful negotiations, although limited to plant genetic resources for food and agriculture, is not limited only to *ex situ* collection not addressed by the Convention.

on the consensus already achieved through the Commission's previous discussions, as embodied in the International Undertaking and its annexes". This was endorsed by the 1993 FAO Conference.

The Negotiating Process

35. The implementation of FAO Conference Resolution 7/93 for the revision of the International Undertaking, is being addressed through both regular and extraordinary sessions of the Commission, assisted by its intergovernmental Working Groups.

36. Following discussions by the Working Group, a first draft of the consolidated text, incorporating the annexes into the main body of the Undertaking, was submitted to the First Extraordinary Session of the Commission, which undertook a first reading of Articles 1 to 14, noting alternative wordings that countries wished to suggest, identifying subjects that would require further negotiation, and making additional comments on the structure of the text and proposals for modifications. It requested the Secretariat to incorporate these into a second draft of the consolidated text, to be considered at its Sixth Session. The report of the First Extraordinary Session of the Commission was made available to the First Session of the Conference of the Parties.

37. In discussing the second draft of the consolidated text of the International Undertaking, the Sixth Session of the Commission¹⁰ concentrated on Articles 3 (Scope), 11 (Availability of Plant Genetic Resources), and 12 (Farmers' Rights), taking into consideration a number of secretariat documents¹¹ analyzing scientific, economical, legal and institutional aspects of the issues. It also undertook a first reading of the preamble. The Commission requested the Secretariat to integrate new texts proposed by countries into a new consolidated text for further negotiation.

38. The report of the First Extraordinary Session of the Commission was made available to the First Conference of the Parties. The report of the Sixth Session of the Commission is available to the current session of the Conference of the Parties. It contains, *in extenso*, the proposals made by countries for the next consolidated draft negotiating text.

39. The Commission has foreseen the continuation of its negotiations for the revision of the International Undertaking, through extraordinary and regular sessions in 1996 and 1997.

IV. THE FOURTH INTERNATIONAL TECHNICAL CONFERENCE ON PLANT GENETIC RESOURCES

Aims of the Fourth International Technical Conference

40. FAO is organizing the Fourth International Technical Conference on Plant Genetic Resources in Leipzig, Germany, in June 1996. The Leipzig Conference is expected to adopt a first Report on the State of the World's Plant Genetic Resources for Food and Agriculture and a first Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources, as part of the FAO Global System on Plant Genetic Resources.

41. The Fourth International Technical Conference, with its preparatory process, aims to develop consensus and commitment from countries, and from all relevant sectors, for the conservation of plant genetic resources for food and agriculture, and their use in sustainable development, and, in particular:

¹⁰ The Report of the Commission's Sixth Session is available to the Conference of the Parties as an information document.

¹¹ CPGR-6/95/8, *Revision of the International Undertaking on Plant Genetic Resources: Issues in Stage II: Access to Plant Genetic Resources and Farmers' Rights*, CPGR-6/95/8 Supp., *Revision of the International Undertaking on Plant Genetic Resources: Analysis of Some Technical, Economic and Legal Aspects for Consideration in Stage II: Access to Plant Genetic Resources and Farmers' Rights*

- i) to catalyze action at the country level to promote capacity-building, including increased communication and access to information, improved planning and evaluation, the identification of problems and emergency needs, the formulation of projects to address such needs, and the encouragement of regional cooperation and initiatives (see para. 43-47);
- ii) to describe, through the Report on the State of the World's Plant Genetic Resources, the current situation of plant genetic resources, and identify gaps and needs and propose priorities for action (see para. 48-50); and
- iii) to secure agreement on a Global Plan of Action for plant genetic resources, as it emanates from the Report on the State of the World's Plant Genetic Resources, building upon the outline plan of action of Agenda 21 (see para. 51 and 52).

42. In line with the recommendations of UNCED and the FAO Conference, and in support of Resolution 3 of the Nairobi Final Act, the Fourth International Technical Conference and its preparatory process will transform the relevant parts of Agenda 21 into a costed Global Plan of Action, contribute to the implementation of the Convention on Biological Diversity and help make the FAO Global System on Plant Genetic Resources fully operational. The FAO Conference has noted that the revision of the International Undertaking, and the development of a Report on the State of the World's Plant Genetic Resources and a Global Plan of Action, are major components of FAO's contribution to, and role in, implementing the Convention on Biological Diversity.

The Preparatory Process

43. The first Report on the State of the World's Plant Genetic Resources and the first Global Plan of Action are being elaborated through a participatory, country-driven preparatory process for the Fourth International Technical Conference. The process has been designed to offer a number of opportunities for specific country inputs:

- i) the preparation of Country Reports assessing the status of plant genetic resources in each country, focusing on needs, and gaps in institutional capacities for conserving and developing these resources. By 7 August 1995, Country Reports had been received from 124 countries; and
- ii) a series of sub-regional and regional meetings, at which countries may present their reports, identify common problems and possible solutions; and discuss draft elements of the Report on the State of the World's Plant Genetic Resources and the Global Plan of Action. The meetings would adopt sub-regional synthesis reports. Twelve meetings were planned for the second semester of 1995.

44. The Commission on Plant Genetic Resources provides guidance on the process as a whole, and will review in detail drafts of the State of the World's Plant Genetic Resources and the Global Plan of Action, at its Second Extraordinary Session in April 1996.

45. The Subsidiary Body for Scientific, Technical and Technological Advice (SBSTTA) of the Conference of Parties addressed, at its first meeting in September 1995, the question of "how the Convention on Biological Diversity could contribute to the preparation for the forthcoming International Technical Conference on Plant Genetic Resources for Food and Agriculture in 1996."

46. Additional technical inputs are provided by scientific and other experts through case-studies and issue-analysis papers, as well as through workshops and an electronic bulletin board system. This complements existing background information, including that held in FAO's World Information and Early Warning System on Plant Genetic Resources. In the preparation of the Fourth International Technical Conference on Plant Genetic Resources, FAO is collaborating, in particular, with the International Plant Genetic Resources Institute (IPGRI) and other International Agricultural Research Centres of the Consultative Group on International Agricultural Research (CGIAR).

47. Further inputs to the process are provided through informal channels, including through visits to countries, complementary activities undertaken by governments, institutions, non-governmental organizations, and others, in support of the preparatory process.

The Report on the State of the World's Plant Genetic Resources for Food and Agriculture

48. The Report on the State of the World's Plant Genetic Resources will describe the current situation of plant genetic resources for food and agriculture, at the global level, and identify the gaps and needs for their conservation and sustainable utilization, as well as emergency situations. The Report will focus on plants' importance to world food security and sustainable agriculture. In so far as the Report covers matters specifically related to forest genetic resources, it will concentrate on agroforestry and forestry for food production. In particular, the Report will:

- i) assess the present state of genetic diversity, the degree of genetic erosion, the current coverage and status of *in situ* and *ex situ* conservation, and the utilization of plant genetic resources for food and agriculture. The Report will build upon assessments by country and by sub-region, and, to the extent feasible, by crop group;
- ii) identify major constraints to plant genetic resources conservation, utilization and exchange;
- iii) evaluate the extent to which collections are used and developed, and identify problems which hinder their full utilization for plant breeding;
- iv) assess national and regional capabilities for the conservation and utilization of plant genetic resources for food and agriculture, in terms of human resources, institutional structures and legal mechanisms, and the methodologies employed;
- v) examine areas of special interest for the conservation and utilization of plant genetic resources for food and agriculture, such as informatics, new biotechnologies, local technologies, and issues such as on-farm conservation, and the scope for new approaches to plant breeding which would maintain diversity in production systems; and
- vi) identify technologies appropriate for meeting the special needs of the developing countries, and assess the current state and pattern of technology transfer in plant genetic resources.

49. The report will be organized into four main parts:

- Part I: "State of Diversity" - an assessment of the state of conservation, erosion and utilization of plant genetic resources; and an analysis of the underlying processes;
- Part II: "State of the Art" - a survey of the state of scientific, technical, legal and other methodologies and tools for the conservation and utilization of plant genetic resources;
- Part III: "State of Capacity" - a review of the state of human resources, institutional structures, and capacity to use relevant methodologies and tools, for the conservation and utilization of plant genetic resources, at the (sub-) regional, and global levels;
- Part IV: "Summary and Conclusions" - a summary drawing together the main findings of the Report.

50. Each of the three main parts will include an assessment of the gaps and needs for improving the conservation and sustainable utilization of plant genetic resources, including an identification of the major constraints to conservation, utilization and exchange, and an evaluation of the extent to which plant genetic resources are used and developed, identifying in particular problems which hinder their full utilization for plant breeding. An executive summary will also be provided.

The Global Plan of Action for the Conservation and Utilization of Plant Genetic Resources

51. The Global Plan of Action for Plant Genetic Resources will complement and draw upon the Report on the State of the World's Plant Genetic Resources. Building upon the skeleton programme of action in Agenda 21, it will:

- i) propose policies and strategies for the conservation and utilization of plant genetic resources for food and agriculture at the national, regional and global levels, with particular attention to the linkages between conservation programmes, and utilization capabilities and programmes;
- ii) assist countries in elaborating plans or programmes of priority action for conservation activities at the national level;
- iii) assist countries in strengthening national capabilities for utilizing plant genetic resources, and their national plant breeding and seed production capacities;
- iv) propose appropriate and feasible measures to make the Global System for Plant Genetic Resources more effective; and
- v) include costed programmes, projects and activities, to be financed by an international fund and other mechanisms.

52. The Global Plan of Action will provide details on activities, including the basis for action, and information regarding their implementation. *Appendix 2* provides the structure of the Global Plan of Action, and an indicative list of the major areas of activity.

V. DEVELOPMENTS REGARDING *EX SITU* COLLECTIONS OF PLANT GENETIC RESOURCES: THE INTERNATIONAL NETWORK

Background

53. Paragraph 3 of Article 15 of the Convention, "Access to Genetic Resources", states that, "For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by Parties that have acquired the genetic resources in accordance with this Convention". This means that the provisions on sharing the benefits, and for prior informed consent to access, do not apply to *ex situ* collections which are located outside the country of origin, and which were acquired prior to the entry into force of the Convention.

54. This issue was identified as outstanding in Resolution 3 of the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity, which recognized that solutions to this issue needed to be sought within the FAO Global System. In line with Resolution 3, and following the entry into force of the Convention, FAO has redoubled its efforts to obtain an accurate technical picture of the situation regarding collections assembled prior to its entry into force, and implement policy solutions within the Global System, such as the further development of the International Network of *ex situ* collections under the auspices of the Organization. Information on these technical and policy actions are given in this section.

Existing *ex situ* collections

55. Most plant genetic resources maintained in *ex situ*¹² collections are located either in genebanks or in botanical gardens. In general, material held in genebanks contains much intraspecific variation

¹² The Convention defined "*ex situ* conservation" as "the conservation of components of biological diversity outside their natural habitats". By *ex situ* collections is meant collections of germplasm held outside their natural habitat.

of a limited number of species, mainly food crops; botanical gardens, on the other hand, contain a great number of species, but very little intraspecific variation.

Genebank collections

56. In the case of genebank collections, FAO has conducted a survey of the current world situation, largely on the basis of information maintained in the FAO World Information and Early Warning System (see para. 17-19) and information in the Consultative Group on International Agricultural Research (CGIAR). Some preliminary information was provided to the first meeting of the Conference of the Parties. The full survey was subsequently presented to the Commission on Plant Genetic Resources¹³.

57. According to the data analyzed, there are 4.41 million accessions currently in *ex situ* storage. The survey shows that 50.4% of accessions are held in developed countries, and 38% in developing countries; the CGIAR Centres hold the remaining 11.6%. A breakdown by regions is as follows: Europe holds 30.4% of accessions, Asia 22%, North America 17%, Latin America 10%, Africa 6%, and Oceania 3%; the balance of 11.6% is held by the CGIAR Centres. Most *ex situ* holdings are of cereals (46.8%) and food legumes (16.2%). Other important holdings are forages (9.6%), vegetables (7.6%), roots and tubers (4.1%), fruits (4.0%), oil-crops (2.0%), fibre crops (1.6%) and beverages (1%). All other crop-groups account for less than 1% of holdings.

58. Overall, the type of sample is known for over 30% of the world's holdings. In the case of the CGIAR Centres, this is identified for about 58% of the holdings, and, in the case of national holdings, for about 24%. Of world holdings for which the type of sample is recorded, 43% are varieties developed by farmers and 41% are formal breeders' varieties and other materials. The remaining 16% is of wild samples.

59. The origin of holdings is often unclear. Data available to FAO and IBPGR (now IPGRI) in the late 1980s suggested that the origin was known for about one quarter of the world's holdings. From FAO's recent survey, it was not possible to draw accurate conclusions. Requests for information on this subject frequently did not draw a response.

60. The survey also provided information on the characterization, evaluation and documentation of holdings, the conditions under which material is conserved, the availability and exchange of germplasm, the duplication of collections, the regeneration and genetic integrity of material, and the financial status of collections.

61. Further and more up-to-date information on world holdings is being assembled through the country-driven preparatory process for the Fourth International Technical Conference.

Botanical Gardens

62. FAO is in the process of conducting a survey of *ex situ* plant genetic resources maintained in botanical gardens. The initial results suggest that botanical gardens, as a whole, conserve or cultivate approximately half of all higher plants known on our planet. Some 75% of germplasm collections maintained in botanical gardens are located in Europe and the United States. However, there are also a large number of collections of indigenous flora maintained in developing countries. There is little information on the size of collections, and limited information on geographical origin. The legal status (ownership) of the collections is often unclear, although easy access is usually granted to germplasm.

63. The initial results of this ongoing survey were brought to the attention of the Sixth session of the Commission and the final report is expected to be available to the next session. If requested, FAO could also make the report available to the Conference of the Parties.

64. From the data already obtained, it is clear that only part of the *ex situ* germplasm in botanical gardens is of immediate relevance to food and agriculture. The guidance of the Conference of the Parties is sought as to how FAO, when addressing the outstanding question of what Resolution 3 of the Nairobi Final Act described as "*ex situ* collections not acquired in accordance with the Convention", should deal with those resources collected prior to the entry into force of the Convention, which are not immediately of value to food and agriculture.

The legal status of *ex situ* collections and policy framework: the International Network

65. The question of the ownership of the material maintained in genebanks was raised by FAO's governing bodies in the 1980s. This *ex situ* material was generally the result of international cooperation. It had often been collected in the main areas of diversity of cultivated species, which are usually located in developing countries, and stored in genebanks, mainly in developed countries. Questions were raised as to who owned this material: the country where it was collected, the country or institution where it was stored, or humanity in general.

66. In 1987, the FAO Legal Office prepared a study at the request of the Commission on Plant Genetic Resources. The study showed that, regardless of where the material was collected, the ownership of genetic material held in government genebanks, or in those of public institutions, was, in most cases, for practical purposes considered to be vested in the states in which the genebanks were located. Little information about *ex situ* collections of plant genetic resources held by private corporations was available. For material held in the Centres of the CGIAR, the legal position was unclear.

67. The Commission found this situation unsatisfactory. It noted that many of the collections had been made on the basis of agreements at the operational level, which provided for the material collected to be available, but considered these informal agreements to be insufficient. The Commission therefore called for the implementation of Article 7.1(a) of the International Undertaking which provided for the development of an "international network of base collections in genebanks under the auspices and/or jurisdiction of FAO". Countries and institutions which voluntarily decide to place the collections in their genebanks within this network agree to ensure that the genetic material is safely conserved, and will be made available for plant breeding and research purposes, while respecting the rights of the providers of germplasm.

68. Following a recommendation of the Commission, at that session, the Director-General approached Governments, the International Agricultural Research Centres of the CGIAR, and other bodies, with a view to ascertaining their readiness to bring their collections under the auspices or jurisdiction of FAO and to indicate the kind of arrangement they favoured. Thirty-two countries indicated their willingness to make their genebanks part of the International Network.¹⁴

69. After the adoption of Resolution 3 of the Nairobi Final Act in 1992, the CGIAR Centres offered to place their collections in the International Network of Germplasm Collections. The Intergovernmental Committee of the Convention on Biological Diversity strongly supported the efforts to bring the *ex situ* collections held by the CGIAR Centres under the auspices of FAO. Following two years of negotiations

¹⁴ Argentina, Bangladesh, Chile, Costa Rica, Czech Republic, Denmark, Ethiopia, Finland, France, Germany, Indonesia, India, Italy, Japan, Iraq, Madagascar, Morocco, Netherlands, Norway, Pakistan, Philippines, Russia, Senegal, Spain, Sweden, Switzerland, Syria, Togo, Tunisia, United Kingdom, Uruguay and Yemen.

between FAO and the relevant Centres,¹⁵ under the guidance of the Commission on Plant Genetic Resources, agreements were signed in late 1994 between FAO and twelve Centres. The Agreement was made available to the First Meeting of the Conference of the Parties in December 1994.¹⁶ This is a practical step towards the implementation of Resolution 3 of the Nairobi Final Act, which recognized the need to seek solutions, within the FAO Global System on Plant Genetic Resources, to the question of access to *ex situ* collections not acquired in accordance with the Convention.

70. In joining the Network, the CGIAR Centres provided lists of "designated germplasm", totalling c. 450,000 accessions collected/acquired prior to the entry into force of the Convention.

71. The agreements between FAO and CGIAR Centres give FAO and the Commission on Plant Genetic Resources a number of responsibilities and obligations regarding the inspection of activities related to conservation and exchange; monitoring, and recommending action; the setting of policy; the evacuation and transfer of collections; technical backstopping; and the distribution of germplasm and of information.

72. By these agreements, the CGIAR Centres recognize "the intergovernmental authority of FAO and its Commission in setting policies for the International Network", and accept a number of responsibilities and obligations, in particular, to hold designated germplasm "in trust for the benefit of the international community", and "not to claim ownership, or seek intellectual property rights over the designated germplasm and related information." The Centres have also agreed to maintain their genebanks according to the standards endorsed by the Commission.¹⁷ In addition, FAO and IPGRI are jointly preparing standards for *in vitro* collections and for field genebanks, as well as guidelines for the regeneration of stored material, for the consideration of and possible approval by the Commission on Plant Genetic Resources. A joint study of the CGIAR genebanks' operations is being undertaken. Discussions with the CGIAR Centres continue regarding implementation of the agreements, in particular with respect to Farmers' Rights, including the sharing of benefits derived from this material.

73. With respect to the offer by countries to bring national *ex situ* collections under the auspices of FAO and subsequent ongoing negotiations, the Sixth Session of the Commission agreed that FAO should continue these negotiations and that the duration of the agreements should be limited to allow for their possible revision in the light of the outcome of the ongoing negotiations to revise the International Undertaking on Plant Genetic Resources.

74. The agreements, which fall within the context of the International Undertaking, might be integrated, within the framework of the revised Undertaking, into a possible protocol to the Convention on Biological Diversity. This would allow access to *ex situ* collections, an issue left outstanding by the Convention and Resolution 3 of the Nairobi Final Act, then to be brought under the framework of the Convention.

¹⁵ The International Centre for Tropical Agriculture (CIAT), the International Maize and Wheat Improvement Centre (CIMMYT), the International Potato Centre (CIP), the International Centre for Agricultural Research in the Dry Areas (ICARDA), the International Centre for Research in Agroforestry (ICRAF), the International Crop Research Institute for the Semi-arid Tropics (ICRISAT), the International Institute of Tropical Agriculture (IITA), the International Livestock Centre for Africa (ILCA), the International Network for the Improvement of Banana and Plantain (INIBAP), the International Plant Genetic Resources Institute (IPGRI), the International Rice Research Institute (IRRI) and the West Africa Rice Development Association (WARDA).

¹⁶ Document CPGR-Ex1/94/Inf. 5 Add. 1.

APPENDIX 1

**MEMBERS OF FAO COMMISSION ON PLANT GENETIC RESOURCES
AND/OR COUNTRIES WHICH HAVE ADHERED TO THE INTERNATIONAL
UNDERTAKING ON PLANT GENETIC RESOURCES
(August 1995)**

AFRICA	ASIA AND THE SOUTH WEST PACIFIC	EUROPE	LATIN AMERICA AND THE CARIBBEAN
Algeria 1/2	Australia 1/2	Albania 1/	Antigua and Barbuda 1/2
Angola 1/2	Bangladesh 1/2	Austria 1/2	Argentina 1/2
Benin 1/2	China, People's	Belgium 1/2	Bahamas 1/2
Botswana 1/	Republic of 1/	Bulgaria 1/2	Barbados 1/2
Burundi 1/	Democratic People's	Croatia 1/	Belize 1/2
Burkina Faso 1/2	Republic of Korea 1/2	Cyprus 1/2	Bolivia 1/2
Cameroon 1/2	Fiji 2/	Czech Republic 1/2	Brazil 1/
Cape Verde 1/2	India 1/2	Denmark 1/2	Chile 1/2
Central African	Indonesia 1/	Estonia 1/	Colombia 1/2
Republic 1/2	Japan 1/	European Community 1/	Costa Rica 1/2
Chad 1/2	Korea, Republic of 1/2	Finland 1/2	Cuba 1/2
Congo 1/2	Malaysia 1/	France 1/2	Dominica 1/2
Côte d'Ivoire 2/	Maldives 1/	Germany 1/2	Dominican Republic 1/2
Equatorial	Mongolia 1/	Greece 1/2	Ecuador 1/2
Guinea 1/2	Myanmar 1/	Hungary 1/2	El Salvador 1/2
Ethiopia 1/2	Nepal 1/2	Iceland 1/2	Grenada 1/2
Gabon 1/2	New Zealand 1/2	Ireland 1/2	Guatemala 1/
Gambia 1/	Pakistan 1/	Israel 1/2	Guyana 1/
Ghana 1/2	Philippines 1/2	Italy 1/2	Haiti 1/2
Guinea 1/2	Samoa 1/2	Latvia 1/	Honduras 1/2
Guinea-Bissau 1/	Solomon Islands 2/	Liechtenstein 2/	Jamaica 1/2
Kenya 1/2	Sri Lanka 1/2	Lithuania 1/	Mexico 1/2
Lesotho 1/	Thailand 1/	Malta 1/	Nicaragua 1/2
Liberia 1/2	Tonga 2/	Netherlands 1/2	Panama 1/2
Madagascar 1/2	Vanuatu 1/	Norway 1/2	Paraguay 2/
Malawi 1/2	Vietnam 1/	Poland 1/2	Peru 1/2
Mali 1/2		Portugal 1/2	Saint Christopher
Mauritania 1/2		Romania 1/2	and Nevis 1/
Mauritius 1/2	NEAR EAST	Russia 2/	Saint Lucia 1/
Morocco 1/2		Spain 1/2	Saint Vincent and
Mozambique 2/	Afghanistan 1/	Slovak Republic 1/	the Grenadines 1/
Niger 1/2	Bahrain 2/	Sweden 1/2	Suriname 1/
Rwanda 1/2	Egypt 1/2	Switzerland 1/2	Trinidad and
Senegal 1/2	Iran, Islamic	Turkey 1/2	Tobago 1/2
Sierra Leone 1/2	Republic of 1/2	United Kingdom 1/2	Uruguay 1/
South Africa 1/2	Iraq 1/2	Yugoslavia 1/2	Venezuela 1/
Sudan 1/2	Jordan 1/		
Tanzania 1/2	Kuwait 2/		
Togo 1/2	Lebanon 1/2		
Uganda 1/	Libya 1/2		
Zaire 1/	Oman 2/		
Zambia 1/2	Syria 1/2		
Zimbabwe 1/2	Tunisia 1/2		
	Yemen 1/2		
			NORTH AMERICA
			Canada 1/
			United States of
			America 1/

1/ Members of the Commission.

2/ Countries which have adhered to the International Undertaking.

APPENDIX 2
STRUCTURE OF THE GLOBAL PLAN OF ACTION¹
AND MAJOR AREAS OF ACTIVITY

1. Structure

A brief introduction, providing the framework for action, including:

- a short statement of the context and basis for action, based on the Report on the State of the World's Plant Genetic Resources;
- a succinct statement of aims, referring to and drawing upon, as appropriate, the Convention on Biological Diversity and the International Undertaking on Plant Genetic Resources;
- an overall strategy for the Global Plan of Action as a whole.

The main body of the Plan, providing recommendations of policies and priority activities for meeting the objectives of the Plan. In line with the wish that the Plan be "action-oriented", this will constitute the main body of the plan. This section would build upon the relevant parts of Agenda 21 for structure and content, and, in particular, programme area G of Chapter 14. Major areas for the Plan are given below.

For each of the major areas of activity, the following would be provided:

- Basis for the activity: statement of the problem, including a summary of relevant conclusions from the Report on the State of the World's Plant Genetic Resources and relevant recommendations from Agenda 21, *etc.*;
- Activities, including specific objectives, approach, assumptions, expected benefits and level of priority;
- Implementation of the activity through capacity building, research, technology development and transfer, policy guidance, regional cooperation and international coordination.
- Identification of financial resource needs, and cost estimates. This section might also include possible sources of financing, including resource reallocation.

A concluding section, providing preliminary cost estimates. It would refer to and summarize priorities and list basic criteria for the allocation of resources. The concluding section would also identify all possible sources of funding for the conservation and utilization of plant genetic resources for food and agriculture.

It is understood that the above would not imply the negotiating of a financial mechanism for the funding of the Global Plan of Action, or the making of a binding commitment to the funding - at any level - of the Global Plan of Action.

An annex will provide a provisional project portfolio or illustrative examples of projects.

The Global Plan of Action might also include a "Leipzig Declaration" Alternatively, this might be included as a separate document.

2. Major areas of activity for the Global Plan of Action

- i) Monitor genetic diversity and erosion and establish an early warning system in order to mitigate loss of genetic resources, and identify sites for collecting or *in situ* conservation;
- ii) explore and collect important and/or threatened plant genetic resources;
- iii) ensure the long-term safety of existing germplasm collections through a programme of regeneration and safe duplication;
- iv) establish and/or strengthen germplasm conservation facilities, technologies, and programmes as part of an integrated conservation and utilization strategy;
- v) characterize, evaluate and document germplasm collections;
- vi) identify and strive to overcome the obstacles for the utilization of conserved genetic resources in order to promote their use;
- vii) develop methodologies for and promote on-farm and community-level conservation and use of plant genetic resources as part of an integrated conservation and utilization strategy;
- viii) promote the *in situ* conservation of wild plants as part of an integrated conservation strategy;
- ix) strengthen plant breeding and pre-breeding capabilities, utilize greater diversity in plant breeding and promote approaches to plant breeding which promote the maintenance of diversity;
- x) improve the availability of good quality seeds and other planting material to farmers, including through the development of appropriate technologies;
- xi) improve conservation and utilization of under-utilized species and local crop and promote crop diversification;
- xii) facilitate access to plant genetic resources, information and technologies;
- xiii) promote the development of legal and other mechanisms to protect the rights of providers of germplasm;
- xiv) develop methodologies for the economic valuation of plant genetic resources and for the realization of these values;
- xv) promote national and regional planning for the conservation and sustainable utilization of plant genetic resources and integration with planning for sustainable agriculture;

Specific, concrete objectives would be developed for each area of activity. As far as possible, these would be formulated so that they could be used to monitor and assess the progress of the Plan. Details of the activities would be developed in Part II of the Global Plan of Action.

The major areas of activity will be implemented in various ways, including:

- i) National capacity-building and development, including training and other forms of human resource development, institutional development, and physical capacity building. In accordance with the Convention on Biological Diversity, and with recommendations of the Commission, the main level for implementation of the Global Plan of Action would be at the national level, including action taken at the level of the community, farm etc. This modality would include material support to national programmes and technical assistance to countries. It might include a specific allocation for action at the Community level.
- ii) Support to sub-regional and regional networks and cooperation. This modality would include material support and technical assistance provided on a regional or sub-regional basis, including the strengthening of networks and other cooperative arrangements.
- iii) International cooperation and coordination. Whilst the emphasis of the Global Plan of Action would be at the local, national and regional levels, a certain amount of international coordination is required. This stems in part from factors such as the interdependence of countries for access to plant genetic resources for food and agriculture. Such activity might include mechanisms to facilitate the exchange of germplasm, information and technologies, as well as activities such as global programmes to ensure regeneration and safe duplication of *ex situ* collections. The Global System for the Conservation and Utilization of Plant Genetic Resources will provide the framework for international coordination, including through its components such as the World Information and Early Warning System and the International Network of *ex situ* Collections.
- iv) Policy formulation and implementation. Policies might need to be developed both for the national and international levels in order to promote conservation of genetic resources, transfer of technologies etc.
- v) Scientific, socioeconomic and legal research. The field of plant genetic resources for food and agriculture is advancing rapidly both in technical/scientific areas, and in policy/legal matters. Further research may be warranted as part of the Global Plan of Action in order to improve the tools available for the conservation and sustainable utilization of plant genetic resources for food and agriculture.

