UNEP

CBD

CONVENTION ON BIOLOGICAL DIVERSITY

Distr.
GENERAL

UNEP/CBD/COP/2/Inf.13/Rev.1
9 November 1995

ORIGINAL: ENGLISH

CONFERENCE OF THE PARTIES TO THE
CONVENTION ON BIOLOGICAL DIVERSITY
Second meeting
Jakarta, 6-17 November 1995
Item 8.3 of the provisional agenda

FAO GLOBAL SYSTEM FOR PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

The attached report of the Sixth Session of the FAO Commission on Plant Genetic Resources and a document prepared for the Commission on "Recent Developments of Relevance to the Draft Code of Conduct for Plant Biotechnology" are made available to the second meeting of the Conference of Parties at the request of the Commission on Plant Genetic Resources. A document prepared for the Commission on "Cooperation in the Implementation of the Convention on Biological Diversity on Matters of Interest to the Commission on Plant Genetic Resources" is also attached for the information of the Conference of Parties in connection with Agenda Item 8.3: FAO Global System for Plant Genetic Resources for Food and Agriculture.

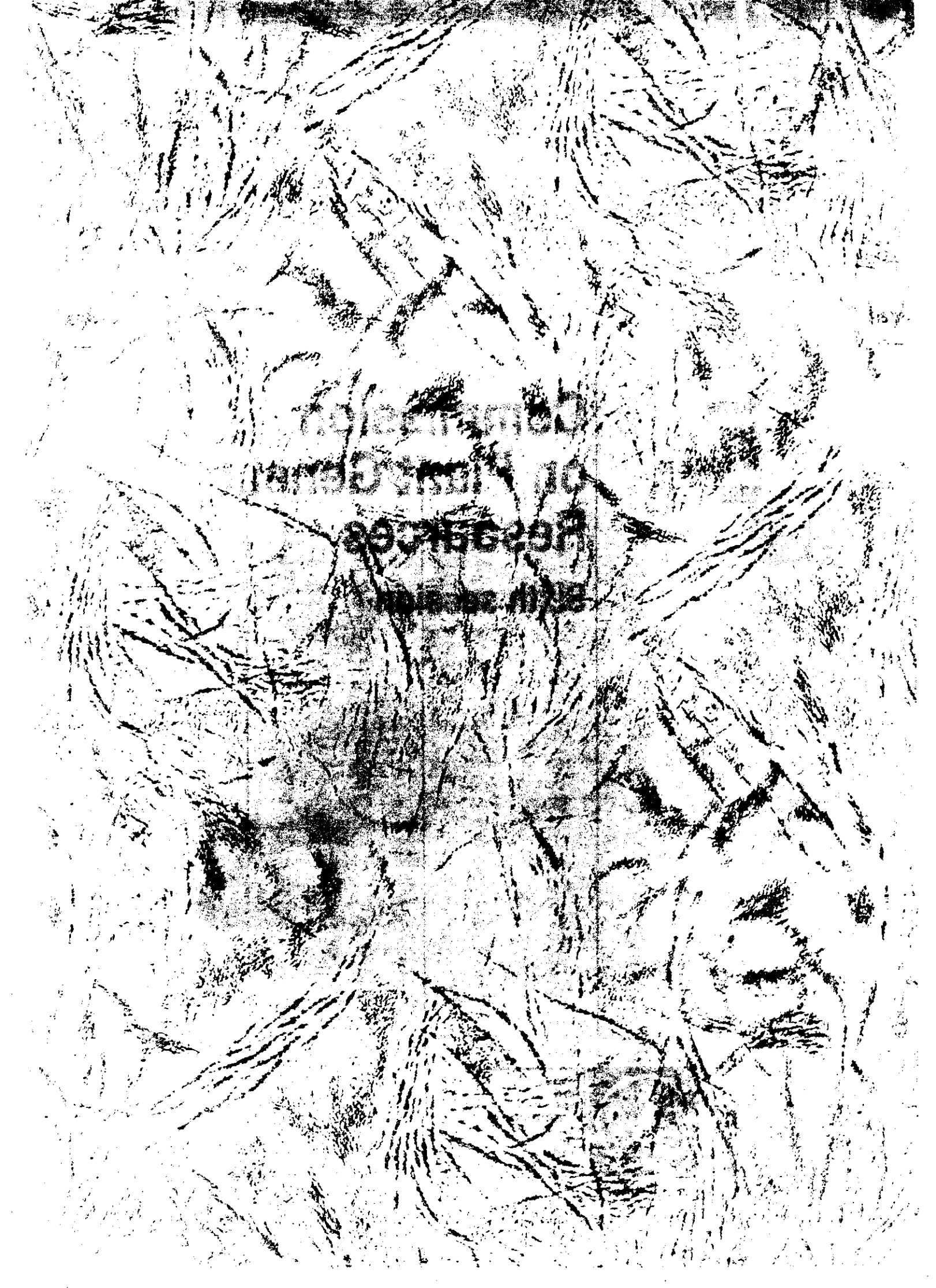
These documents are made available at the request of FAO and replace Document UNEP/CBD/COP/2/Inf.13.

REPORT

Rome,
Italy,
19-30 June
1995

Commission on Plant Genetic Resources

Sixth session



CPGR-6/95/REP

REPORT OF THE COMMISSION ON PLANT GENETIC RESOURCES

Sixth session
Rome, 19-30 June 1995

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 1995

The designations employed and the presentation of material in this publication do not imply the expression of any opinion whatsoever on the part of the Food and Agriculture Organization of the United Nations concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries.

For copies of Commission documents, please contact:

The Secretary
FAO Commission on Plant Genetic Resources
Plant Production and Protection Division
Food and Agriculture Organization of the United Nations
00100 Rome, Italy

Facsimile: (+ 39 6) 52256347/52253152
email: jose.esquinas@fao.org

CONTENTS

Appendices

V. PROGRESS REPORT ON THE GLOBAL SYSTEM FOR THE CONSERVATION AND UTILIZATION OF PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

10. Document CPGR-6/95/4, *Progress report on the Global System for the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture*, presented a succinct overview of each component of the Global System,[1] and described progress made in the last biennium. Other documents gave detailed information on specific components, and are mentioned under each sub-item. The Commission complimented the Secretariat on the excellent quality of the documentation.

11. The Commission noted that the Global System, with its component parts, was the central, continuously evolving product of its work and negotiations over the last twelve years. The Commission recalled its mandate to "recommend measures that are necessary or desirable, in order to ensure the comprehensiveness of the Global System, and the efficiency of its operation".

12. The Commission noted that, in order to comply with the request in Agenda 21 of the United Nations Conference on Environment and Development (UNCED), that the Global System be strengthened and reviewed, in harmony with the Convention on Biological Diversity, FAO had taken a number of actions: (i) 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) were being developed in the context of the Fourth International Technical Conference; (ii) the International Undertaking was being revised, by the Commission itself, as requested by Conference Resolution 7/93; and (iii) other elements of the Global System had been strengthened during the biennium. Some delegations stressed the need to avoid duplication. Some of these matters were covered under other items of the agenda, and the Commission therefore decided to deal with the matters that were not so covered under the present item.

(i) The International Network of *Ex Situ* Collections

13. The Commission considered documents CPGR-6/95/12 and its Corr. 1, which provided a *Progress report on the International Network of* Ex Situ *Germplasm Collections under the Auspices and/or Jurisdiction of the FAO*, as well as document CPGR-6/95/12 Add. 1, *Joint report by FAO and the International Plant Genetic Resources Institute (on behalf of the CGIAR Centres) on the implementation of the agreement signed between FAO and the CGIAR Centres on 26 October 1994*.

14. The Commission expressed satisfaction with the implementation of the International Network of *Ex Situ* Collections, and in particular with the Agreement signed by FAO and twelve of the CGIAR Centres placing their "designated germplasm" under the auspices of FAO and recognizing "the intergovernmental authority of FAO and its Commission in setting policies for the International Network".

15. With respect to countries joining the International Network, the Commission noted that the model agreements had been developed prior to the Convention on Biological Diversity, and noted the modifications suggested by the Secretariat to bring the model agreements concerning placing national collections in the International Network into line with recent developments, including, in particular, references to the Convention on Biological Diversity. Many delegations recognized that the modifications would be appropriate as a point of reference for future negotiations. Other delegations

---

[1] *Appendix D* presents a chart identifying the elements of the Global System, and a list of countries that are formally part of the Global System, either as members of the Commission on Plant Genetic Resources, or by having adhered to the International Undertaking on Plant Genetic Resources, or both.

I. INTRODUCTION

1. The Sixth Session of the Commission on Plant Genetic Resources met in Rome from 19 to 30 June 1995. A list of delegates and observers is attached as *Appendix O*.

2. Mr Brad Fraleigh (Canada), first Vice-Chair of the Commission, opened the Session and welcomed the delegates. He reviewed the broader international context in which the Commission was working and stressed the need to concentrate on two issues during the Session: preparations for the Fourth International Technical Conference, and the negotiations for the revision of the International Undertaking on Plant Genetic Resources. He congratulated the Secretariat for the excellent practical and technical support rendered to the Commission.

II. ELECTION OF THE CHAIR AND VICE-CHAIRS

3. The Commission elected Mr José M. Bolívar (Spain) as Chair of the Commission. Mr Moorosi Raditapole (Lesotho) and Ms Kristiane Herrmann (Australia) were elected as first and second Vice-Chairs respectively and Mr Fernando José Marroni de Abreu (Brazil) as Rapporteur.

4. Professor A. Sawadogo, Assistant Director-General for Agriculture, welcomed delegates and observers, and presented an opening statement, which is attached as *Appendix N*.

III. ADOPTION OF THE AGENDA AND TIMETABLE FOR THE SESSION

5. The Commission discussed the proposed Agenda and Timetable and agreed with the proposal of the Working Group that item 9, on international agreements, be discussed within the context of the Global System (item 5). It also agreed that item 4, the Revision of the Terms of Reference of the Working Group and the Election of its Officers, should be considered together with item 10, the Future Work of the Commission. The agenda, as adopted, is given in *Appendix A*.

6. The list of documents appears as *Appendix B*.

IV. REPORTS OF THE WORKING GROUP

7. The Commission noted that, at its First Extraordinary Session, it had discussed the reports of the Ninth Regular Session (11 to 12 May, 1994) and First Extraordinary Session (3 to 4 November, 1994) of the Working Group.

8. The Commission took note of the Report of the Chair of the Tenth Session of the Working Group (3 to 5 May, 1995), contained in document CPGR-6/95/2, and thanked him for the very thorough and useful presentation. It agreed upon the understanding that the Working Group does not negotiate and provide the Commission with binding positions, but provides the Commission with material for consideration.

9. The report by the Chairman of the Tenth Session of the Working Group is in *Appendix C*.

suggested that the model agreements should not be modified at this time. It was also noted that the final form of the agreements would depend on the outcome of the negotiations in the Commission on the revision of the International Undertaking, and that any agreements signed now may need to be revised in the light of that outcome. The Commission therefore *agreed* that the Secretariat should go ahead with the negotiation of agreements, using as appropriate the revised models, and that the duration of the agreements should be reduced 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, in the same way as the agreements already concluded with the CGIAR Centres.

16. The Commission welcomed the joint report by FAO and IPGRI on behalf of the CGIAR Centres on the actions taken to implement the agreements. It noted the interim measures being taken by the Centres in consultation with the FAO Secretariat to ensure the implementation of Article 10 of the Agreement requiring that subsequent recipients of germplasm not claim legal ownership or intellectual property rights over such germplasm, and the continuing discussions on the need for and content of possible interim material transfer agreements.

17. The Commission invited the Director-General of IPGRI, Mr G. Hawtin, to outline the CGIAR's perception of the interlinked technical and policy problems it now faced in managing the Centres' *ex situ* collections, which they had brought into the Network under the auspices of FAO.

18. He recalled that, by signing the agreements with FAO, the CGIAR recognized the inter-governmental authority of the Commission and its role in providing policy guidance regarding the collections. The agreements also stated that the Centres "shall not claim legal ownership over the designated germplasm, nor shall [they] seek any intellectual property rights over that germplasm or related information". Within this context, he noted that the collections brought into the Network covered mostly material assembled before the coming into force of the Convention on Biological Diversity, and that the Centres were concerned that the international community rapidly reach agreement on arrangements regarding access, particularly for new material that would enter the Centres' collections.

19. Mr Hawtin discussed at length questions that the CGIAR was attempting to address, and approaches to facilitating access to plant genetic resources and to promoting the equitable sharing of the benefits arising from their commercial exploitation. He stressed the importance of the international community evolving simple, effective instruments that did not imply very high transaction costs, and that would not result in plant breeders preferring to use only existing material. The Commission welcomed the Director-General of IPGRI's excellent presentation and requested that the information it contained be recorded in writing and submitted to the Commission. Mr Hawtin said that his statement did not represent CG policy, but instead contained ideas for discussion on the development of a potential model system for the linking of access, utilization and the equitable sharing of the benefits. The statement submitted by IPGRI is in *Appendix H*.

20. The view was expressed that the document showed that it might be possible to combine both bilateral and multilateral arrangements for benefit-sharing in ways that would be compatible with the Convention on Biological Diversity. It was also noted that the document differentiated specific conditions of access to material acquired before the entry into force of the Convention on Biological Diversity from the conditions applicable to the germplasm collected after the entry into force of the Convention. Some countries stressed that the question remains as to whether material acquired after the entry into force of the Convention on Biological Diversity, as well as material developed by the Centres from germplasm acquired wholly or in part after the entry into force of the Convention, should be

"designated", under the terms of the Agreement between FAO and the CG Centres. The Commission noted that "designation" should be a condition set out in a written consent of the country of origin. Some countries considered that the Commission was not yet in a position to give guidance to the CG Centres. A number of others felt that some general guidance could be given on the manner in which the CG Centres should implement the provisions of the Convention on Biological Diversity. Centres should aim to ensure the "fair and equitable sharing of results of research and development and of benefits arising from commercial and other utilization of genetic resources with the country providing such resources", as stated in Article 15 of the Convention. This provision of the Convention should be applied to all uses not falling under the category of "not-for-profit use", and in particular in the case of the employment of intellectual property rights protection of material derived therefrom. They stressed that the CG Centres must fully apply the provisions of the Convention on Biological Diversity.

21. The Commission felt that the system proposed by Mr Hawtin could be a useful contribution for consideration in the context of the revision of the International Undertaking. The Commission *recommended* that IPGRI prepare an in-depth study, for the consideration of the Commission, of various possible systems, which would be compatible with the Convention on Biological Diversity, analyzed in terms of their likely efficiency, practicality and cost-effectiveness.

22. A number of countries suggested that it might be possible to employ the system suggested by Mr Hawtin on an experimental basis, so as to assess its advantages and disadvantages, until the negotiations of the revision of the International Undertaking had been completed. Others felt that it would first be necessary for them to analyze in depth the implications of this proposal. In any case, it provided a rich source of ideas. The Commission noted Mr Hawtin's assertion that while the problem was complex, practical solutions needed to be found and, in his view, could be found.

23. Mr Hawtin stressed the importance of quickly completing the revision of the International Undertaking, as there was at present an international policy vacuum, which, in the opinion of the CGIAR, presented difficulties for the efficient operation of its plant genetic resources activities. The Commission stressed the importance to global food security and sustainable agriculture of a fully effective and operational CGIAR system, as benefiting all countries and its role in providing germplasm, and in technology-transfer, training and capacity-building for developing countries.

24. In answering questions raised by delegates, Mr Hawtin recognized that making the proposed changes within the CG Centres might entail diverting resources from research towards policy and administration, and that the system adopted would require compromise and goodwill between countries. To assess the economic contribution of germplasm towards varieties, he noted that it would be necessary to establish acceptable arbitrary guidelines to determine benefit-sharing, and that the CGIAR could help develop such guidelines, which would be necessary to assess potential benefit-sharing liabilities at the outset of varietal development. He noted that the transaction costs of monitoring or negotiation might, in many cases, outweigh the benefit derived from a small genetic contribution to a plant variety. With respect to the operation of the CGIAR Centres in the period until the revision of the International undertaking was finalized, he felt that the policy on pre-Convention germplasm was clear, but that germplasm placed in the CGIAR collections after the Convention could either be on the same basis of the existing pre-Convention germplasm, or on the basis of the bilateral benefit-sharing agreement outlined in his statement. Some delegates expressed their great concern for the consequences of these measures for the functioning of the International Network, and the difficulties of implementing them. A number of others expressed great support for the proposals put forward by Mr Hawtin, and their support for actions to implement these ideas.

(ii) Code of Conduct on Plant Germplasm Collecting and Transfer

25. The Commission noted with satisfaction that the voluntary Code of Conduct for Plant Germplasm Collecting and Transfer, which had been agreed during its Fifth Session, had been adopted in November 1993, by Conference Resolution 8/93. It also noted that the Code had now been widely distributed.

26. The Commission recognized that the Code represented an example of a minimum international standard, and some countries mentioned that its function is to provide broad guidelines to countries for plant germplasm collection and transfer to facilitate the rational conservation and use of plant genetic resources. It expressed satisfaction that the Code had already assisted a number of countries in developing their national legislation.

27. The Commission also recalled that Article 16.1 of the Code established that the "appropriate national authorities and the Commission on Plant Genetic Resources should periodically review the relevance and effectiveness of the Code", and that it "should be considered a dynamic text that may be brought up to date as required, to take into account technical, economic, social, ethical and legal developments and constraints". In this context, and in the view of several delegations that the Code of Conduct has become obsolete after the entry into force of the Convention, some countries considered that the Code might require modification, in the light of developments and new international instruments, and, in particular, the revision of the International Undertaking, and *requested* the Secretariat to prepare questionnaires to facilitate its monitoring function, and allow any necessary development, modification and updating of the Code.

(iii) Draft Code of Conduct on Plant Biotechnologies

28. The Commission recognized that biotechnology builds on the raw material of genetic resources, and noted that many countries did not have the national capabilities in advanced biotechnologies needed. Some countries noted that the issue of an equitable sharing of the benefits, in terms of access to and the transfer of germplasm and technology, was important, particularly in the light of new developments regarding rights over genetically modified organisms.

29. The Commission recalled that, at its Fifth Session, it had considered a draft Code of Conduct which included provisions to maximize the positive effects of biotechnology and minimize its potential negative effects; to promote access to relevant biotechnologies to which they apply; and for risk assessment and management, particularly with regard to genetically modified organisms related to plant genetic resources for food and agriculture.

30. With respect to the biosafety component of the draft Code, the Commission noted with satisfaction that, as requested by its last session: (i) this component had been transmitted to the Secretariat of the Convention on Biological Diversity, as an input to the Conference of the Parties for the possible development of a protocol on biosafety; (ii) that FAO is participating 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 *requested* that such cooperation between FAO and the Convention's Secretariat and governing bodies continue.

31. The Commission also recalled the suggestion of its last session that FAO further develop the components of the draft Code which were not related to biosafety, for presentation to its Sixth Session, or to a later session, as advised by its Working Group. The Tenth Session of the Working Group had

agreed to defer consideration of a new draft to a later session, and that the Sixth Session of the Commission should consider a Secretariat document on recent biotechnological developments that affected various aspects covered in the first draft Code.

32. Document CPGR-6/95/15, *Recent International developments of relevance to the draft Code of Conduct for Plant Biotechnology*, was then considered. The Commission *requested* that document CPGR-6/95/15 be transmitted as an information document to the Secretariat of the Convention on Biological Diversity, particularly for its relevance to the Conference of the Parties' current consideration of bio-safety issues.

33. The Commission noted that a number of issues that were covered in the draft Code (such as the transfer of agro-biotechnologies and related plant germplasm, as well as intellectual property rights, Farmers' Rights as recognized by the FAO Conference, and rewards for informal innovators) are under consideration during the revision of the International Undertaking and in other relevant forums, including the Conference of Parties to the Convention on Biological Diversity, the World Intellectual Property Organisation (WIPO), the International Union for the Protection of New Varieties of Plants (UPOV) and the World Trade Organization (WTO). It considered, however, that the focus of other forums was not specifically on plant biotechnologies for food and agriculture, as was the case of the Commission.

34. There was some discussion as to whether, in view of the current discussions and negotiations, in FAO and elsewhere, the draft Code should continue to be developed. A number of countries felt that it would be premature to drop either the Code itself, or the biosafety component alone, before the revision of the International Undertaking had been completed, and before the need for and modalities of a biosafety protocol to the Convention on Biological Diversity had been considered by the Conference of the Parties. Some countries considered that it should be dropped. Others considered that only the biosafety component should then be deleted from any further development of the draft Code.

35. The Commission *agreed* to postpone any further development of the draft Code until after the current negotiations for the revision of the International Undertaking were over.

(iv) World Information and Early Warning System (WIEWS)

36. The Commission considered document CPGR-6/95/13, which contained a *Progress report on the World Information and Early Warning System on Plant Genetic Resources for Food and Agriculture*, and noted that document CPGR-6/95/8 Annex provided a summary analysis of data in the WIEWS, on *ex situ* collections throughout the world.

37. The Commission noted that the WIEWS is based on information provided by countries. Some countries recognized the role of the WIEWS as a source of information for the periodic updating of the Report on the State of the World's Plant Genetic Resources, and the action-oriented complementary Global Plan of Action.

38. It was recognized that the Early Warning mechanism is still at an early stage of development, and that it may expand to become more operational through the projects, programmes and activities in the Global Plan of Action. The importance was emphasised of establishing national-level mechanisms effectively to implement any early warning. The Commission suggested that recent technological advances that could permit the decentralization of the WIEWS be explored.

45. The Commission expressed satisfaction at the cooperation developing between FAO and the Secretariat of the Convention on Biological Diversity. It strongly supported the secondment, in accordance with the undertakings made at the first meeting of the Conference of the Parties, as soon as possible, and preferably before the first meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), of an FAO officer to the Secretariat of the Convention, so as to collaborate in matters related to food and agricultural biological diversity. The Commission *requested* that the report of its current 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 Commission. The Commission also *requested* that the report of its current session be transmitted to the first meeting of the Convention's SBSTTA, to assist it in preparing the contribution of the Convention on Biological Diversity to the Fourth International Technical Conference. The Commission considered that the Global System, and its components, including the 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. Cooperation on biosafety is covered in para. 28 to 34 above, on the draft Code of Conduct on Biotechnology, as it affects the conservation and utilization of plant genetic resources for food and agriculture.

VI. REPORTS, PROGRAMMES AND ACTIVITIES ON PLANT GENETIC RESOURCES

46. The Commission considered document CPGR-6/95/5.1, which provided a detailed account of FAO activities from 1993 to 1995, under both the Regular and Field Programmes, related to policies, legal and technical issues on the conservation and sustainable use of plant genetic resources. The Commission complimented the Secretariat for the detailed and informative report on FAO's activities and programmes in the field of plant genetic resources, which was in line with its request in previous sessions and which should serve as a model for future reports, which should be provided to the Commission at each regular session. This would help the Commission fulfil its responsibility to advise FAO on the Organization's plant genetic resource activities. The extent and depth of FAO's various activities dealing with the conservation and sustainable use of plant genetic resources was remarked upon.

47. The Commission recognized that the crop-related networks reported on in Appendix 1 of CPGR-6/95/5.1 were a useful approach to integrating activities on plant genetic resources, and *suggested* that such networks be regarded as part of the Global System, in order to strengthen practical linkages between the conservation and utilization of crop genetic resources, at field level. Delegates encouraged FAO to pursue the continued expansion of the networks' regional and crop coverage. The Commission *recommended* that FAO's ongoing field activities be taken into account in the preparation of the Global Plan of Action on Plant Genetic Resources.

48. The Commission noted with satisfaction the increasing number of field projects with plant genetic resource components, as reflected by countries' own priorities.

49. In considering FAO's projects and programmes in forest genetic resources, some countries emphasized the importance of the recommendations of the Panel of Experts on Forest Gene Resources. It welcomed the elaboration, by the Panel, of lists of priority tree species, classified by region and operational activity. Some countries considered that such prioritization would be of value in the preparation of the Global Plan of Action.

39. The Commission also noted with satisfaction that the WIEWS would be of value to the Clearing House Mechanism of the Convention on Biological Diversity, on matters related to plant genetic diversity for food and agriculture, and suggested that FAO and the Secretariat of the Convention on Biological Diversity should work together on the possible accession by the Clearing House Mechanism to the WIEWS databases. The Commission also considered that the FAO Global System and the WIEWS should also utilize technical information available within the newly established System-Wide Genetic Resources Programme of the Consultative Group on International Agricultural Research (CGIAR), particularly on germplasm maintained by the Centres.

(v) Network of *In Situ* Conservation Areas

40. The Commission supported the need for the development of a network of areas for the *in sit* conservation of plant genetic resources for food and agriculture and felt that this should be establishe on the basis of national policies and strong national commitments. The complex interdisciplinar approach needed, and the lack of agreed technical criteria were noted: the Commission therefore suggested that the activities in other forums in this area be reviewed, so as to identify complementarities and opportunities for cooperation. It also suggested drawing upon relevant policy guidance provided by countries during the preparatory process of the Fourth International Technical Conference, which is expected to be reflected in the Global Plan of Action.

41. The Commission noted with satisfaction that FAO was planning to organize a worldwide technical consultation on protected areas in 1997, and *recommended* that the agenda 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 for action in this respect.

(vi) The broadening of the mandate of the Commission

42. The Commission took note of document CPGR-6/95/Inf. 4, which contained relevant paragraph from the reports of the 1995 sessions of the Committees on Agriculture, Fisheries and Forestry, and the Hundred-and-eighth Session of the Council.

43. The Commission noted the recommendation of the Hundred-and-eighth Session of the Council to the next Conference, that the mandate of the Commission on Plant Genetic Resources be broadened to that of a Commission on Genetic Resources for Food and Agriculture, by a phased step-by-step approach, beginning with domestic animal genetic resources. The Commission agreed that this should not interfere with the ongoing negotiations for the revision of the International Undertaking, or with the preparation of the Fourth International Technical Conference. It was *suggested* that the issue should not be raised in the Commission until these two processes were complete, and that, in the meantime, *ad hoc* sectorial groups, when established, could report to the Committees on Agriculture, Forestry and Fisheries.

(vii) FAO's cooperation with the Convention on Biological Diversity

44. The Commission considered document CPGR-6/95/4 Annex 1, *Cooperation in the implementation of the Convention on Biological Diversity, on matters of interest to the Commission on Plant Genetic Resources*.

(GEF), l'Association de coopération culturelle et technique (ACCT), l'Association des universités partiellement ou entièrement de langue française (AUPELF), the World Wide Fund for Nature (WWF), and the Rural Advancement Fund International (RAFI). It also *asked* the Secretariat to invite relevant regional forums (the Council of Europe, the Southern Common Market (MERCOSUR) and the "Junta del Acuerdo de Cartagena" were mentioned) to submit reports to its future sessions.

VII. THE PREPARATORY PROCESS FOR THE FOURTH INTERNATIONAL TECHNICAL CONFERENCE ON PLANT GENETIC RESOURCES

55. The Commission expressed satisfaction with the quality and comprehensive nature of the documentation, and with the progress of the preparatory process for the Fourth International Technical Conference, described in document CPGR-6/95/6, in particular its country-driven nature, as shown, for example, by the 101 Country Reports that had been received.

56. The Conference Secretariat reported upon the forthcoming sub-regional meetings, which would further strengthen country participation in the process. It noted that these meetings would prepare synthesis reports, based on the Country Reports of each sub-region. India, Kenya and Zimbabwe announced that they would host meetings in their respective sub-regions.

57. Latin American and Caribbean countries expressed a strong desire for a regional meeting to be held, in order to facilitate a regional consensus concerning the documents to be submitted to the Fourth International Technical Conference. The Commission noted the budgetary and time constraints, which may give rise to practical difficulties in holding such a meeting. Nevertheless, the Latin American and Caribbean group insisted on its importance for the preparatory process. The Commission welcomed Colombia's generous offer to host and finance, up to the sum of US$100,000, a regional meeting, in early 1996, for Latin America and the Caribbean, and also thanked Cuba for its willingness to collaborate in the organization of this meeting.

58. The very large task before the Secretariat was noted, and concern expressed over the resources and time available for the completion of its work. It was noted that the budgetary resources were 23 per cent below the objective set for the preparatory process. The Commission also noted suggestions that further extrabudgetary resources might be needed to fund the participation of two representatives from each developing country in the Leipzig Conference.

59. The Commission also reiterated that the main purpose of the Fourth International Technical Conference, and its preparatory process, is the elaboration of the first Report on the State of the World's Plant Genetic Resources, and the first Global Plan of Action, as an integral part of the FAO Global System for the Conservation and Utilization of Plant Genetic Resources. Many delegations also emphasized the importance of a progress report on the revision of the International Undertaking.

60. The Commission noted that the first draft Report on the State of the World's Plant Genetic Resources and the first draft Global Plan of Action would be prepared by the Secretariat in mid-February, in order to be ready for distribution to countries six weeks before the expected date of the extraordinary session of the Commission, in April 1996. Therefore, substantive inputs for the preparation of the first draft of documents could be made until the beginning of January 1996. The first drafts, as finalized by the Commission for consideration at the Fourth International Technical Conference, would be transmitted to countries immediately after that session of the Commission.

50. The Commission also reviewed document CPGR-6/95/5.2, which contained reports provided by a number of United Nations and other inter-governmental organizations, concerning their programmes and activities for the conservation and use of plant genetic resources: *inter-governmental organizations* [the United Nations Conference on Trade and Development (UNCTAD), The United Nations Environment Programme (UNEP), the United Nations Industrial Development Organization (UNIDO), the World Bank, the World Trade Organization (WTO), the Asian Development Bank (AsDB) and the Commonwealth Secretariat]; twelve *Centres of the Consultative Group on International Agricultural Research* (CGIAR) [El Centro Internacional de Agricultura Tropical (CIAT), the Centre for International Forestry Research (CIFOR), the International Maize and Wheat Improvement Centre (CIMMYT), El Centro Internacional de la Papa (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 Research Institute (ILRI), the International Plant Genetic Resources Institute (IPGRI), the International Rice Research Institute (IRRI), and the West Africa Rice Development Association (WARDA)]; and a number of *other non-governmental organizations* [the World Conservation Union (IUCN), Genetic Resources International (GRAIN) and the International Centre for Under-utilized Crops, (ICUC)].

51. During the session, Associated Country Women of the World (ACWW), the International Fund for Agricultural Development (IFAD), and the International Union for the Protection of Plant Varieties (UPOV), made written reports available, which were put at the disposition of delegates, as document CPGR-6/95/5.2 Add. 1. Verbal statements were also made by a number of the organizations present.

52. The Commission welcomed these reports, and thanked the organizations that had presented them. It felt that they provided the Commission and its member countries with very useful information on world activities on plant genetic resources for food and agriculture. It considered that such reports also contributed to the mutual enrichment of understanding, which would lead to greater coordination and synergy in plant genetic resource activities. It stressed the importance of collaboration between organizations, particularly between FAO and IPGRI.

53. In answer to questions addressed to IPGRI, its Director-General, speaking on behalf of the CGIAR Centres, informed the Commission about the CGIAR's System-Wide Genetic Resources Programme (SGRP) and its activities, which included the development of a System-Wide Information Network on Genetic Resources (SINGER), that had been initiated in 1994 in order to strengthen its overall system for the coordination of programmes on plant genetic resources, and its linkages with national programmes. Activities under the System-Wide Genetic Resources Programme included a forthcoming review of genebank operations; strategic studies on *in situ* conservation; the development of guidelines for regeneration, and standards for *in vitro* collections and field genebanks. These activities were being undertaken jointly with FAO. The Commission agreed with these initiatives, and *suggested* that the standards for *in vitro* and field genebanks, and the proposed guidelines for regeneration, be submitted to the Commission for consideration, in view of their possible approval.

54. The Commission considered it important to be regularly apprised of the activities of organizations active in the field of plant genetic resources for food and agriculture, and encouraged organizations that had submitted reports to continue to do so, and the submission of reports by other organizations with relevant activities on plant genetic resources for food and agriculture, such as the United Nations Educational, Scientific and Cultural Organization (UNESCO), the United Nations Development Programme (UNDP), the World Intellectual Property Organization (WIPO), the Conference of the Parties to the Convention on Biological Diversity, the Global Environment Facility

- the Report should include an examination of current government and private sector financial support for the conservation and use of plant genetic resources for food and agriculture;
- the need specifically to focus on the role of farming communities.

67. It was *agreed* that the contribution of plant genetic resources for food and agriculture to world food security should be emphasized, in the context of sustainable agriculture, and that the special nature and needs of agriculture should be stressed. In so far as the Report covered matters specifically related to forest genetic resources, it was *agreed* that it should concentrate on agroforestry and forestry for food production.

68. It was noted that several sources of information, including the World Information and Early Warning System, would be used for the preparation of the Report. It was suggested that the methodology used in producing the Report should be made clear in the Report itself, including identification of areas for which scientific methods of assessment were not available, or lacked precision.

69. Noting the above comments, the Commission endorsed the Outline of the Report on the State of the World's Plant Genetic Resources (CPGR-6/95/10), as the basis on which the Report should be developed.

(ii) The Global Plan of Action for the Conservation and Sustainable Utilization of Plant Genetic Resources

70. The Commission stressed that the Global Plan of Action must be action-oriented. Since it would provide a strategy to guide international cooperation on plant genetic resources for food and agriculture in the coming years, it should be based on clear, but succinctly stated, aims and principles, and include a strategy, information on current activities in the area of the Global Plan of Action, cost estimates, identification of possible sources of financial resources, and priorities and criteria for the allocation of resources. The Commission recalled its recommendation at its Fourth Session that the "Technical Conference be followed by a meeting to define the financial commitments needed for the implementation of the Global Plan of Action, and the terms and conditions of financing". Some countries suggested that the World Food Summit be considered an opportunity to address these issues. It was also *recommended* that the Director-General should report on the outcome of the Leipzig Conference to the World Food Summit.

71. The Commission emphasized the importance of incorporating certain activities into the Global Plan of Action: *inter alia*, characterization and evaluation of germplasm samples, genetic enhancement, pre-breeding, and the use of new technologies, as well as the importance of research. It also noted the need to link conservation activities to the sustainable utilization of plant genetic resources, including plant breeding, and the particular importance of the Plan in improving the use of genetic resources to promote sustainable agriculture in marginal areas, such as areas subject to desertification. The need for the integration of activities in the field of plant genetic resources with activities to promote the development of sustainable agriculture was also emphasized.

72. The Commission agreed that the outline provided by the Secretariat in document CPGR-6/95/11 provided a useful basis for the further development of the Global Plan of Action. It was also stated that the structure and content of the Plan should draw upon Agenda 21. After discussion, the Commission endorsed a revised structure for the Global Plan of Action (*Appendix F*). A preliminary draft, prepared by the Secretariat and reflecting the comments of some delegations, including bracketed text, of a

61. The draft provisional agenda for the Fourth International Technical Conference on Plant Genetic Resources was reviewed and modifications were proposed. A revised draft provisional agenda was agreed (*Appendix E*). It was, however, emphasized that this was still a draft, which includes options in brackets and which should be finalized at the Commission's proposed extraordinary session in April 1996, and that the Fourth International Technical Conference itself would decide the definitive version of the agenda.

62. The Commission *agreed* that the question of high level participation in the Leipzig Conference should be addressed at the Extraordinary Session in April 1996.

63. Germany, as the host country, proposed a number of events complimentary to the formal agenda. The Commission welcomed these proposals. It was announced that the host country agreement between FAO and Germany would soon be signed.

64. The Commission *called* for non-governmental organizations active in the field of plant genetic resources for food and agriculture, including national non-governmental organizations, to be invited as observers to the Leipzig Conference, and to be able to participate as observers in the preparatory process, including the sub-regional meetings.

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

65. The Commission expressed satisfaction with the outline of the State of the World's Plant Genetic Resources submitted to it by document CPGR-6/95/10. The Report would be divided into three main parts:

- *State of Diversity* - an assessment of the state of conservation, erosion and utilization of plant genetic resources, and an analysis of the underlying processes;
- *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;
- *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, regional and global levels.

Additionally, there would be a part providing a Summary and Conclusions, drawing together the main findings of the Report.

66. A number of comments and suggestions were made by some delegations concerning the Report:

- in dealing with appropriation of benefits, the Report should assess the extent to which there is a fair and equitable sharing of the benefits;
- the Report should deal with technology development, as well as with technology transfer;
- the Report should include a factual assessment of the legal capacity of countries;
- the subjects of trade and of intellectual property rights, including the work of the World Trade Organization (WTO), the World Intellectual Property Organization (WIPO) and the International Union for the Protection of New Varieties of Plants (UPOV), in this context, and the effects of intellectual property rights on agricultural and rural communities, should be included;

X. THE FUTURE WORK OF THE COMMISSION

77. The Secretary of the Commission, while proposing the draft provisional agenda for its Seventh Regular Session, indicated that the possibility of convening extraordinary sessions of the Commission would be subject to the availability of funds.

78. The Commission discussed the provisional agenda of its Seventh Session, to be held in spring 1997, and suggested that the item on Reports from International Organizations on their Programmes, Policies and Activities should include a report from the Secretariat of the Conference of the Parties to the Convention on Biological Diversity. It was also suggested that FAO's report should include information on the 1996/97 biennium and on plans for the 1998/99 biennium. The draft provisional agenda for the Commission's Seventh Session is in *Appendix M.*

79. The Commission discussed at length the possibility of, and the need for, holding one or more extraordinary sessions in 1996, to finalize preparations for the Fourth International Technical Conference and to continue the process for the revision of the International Undertaking. A contact group was established which agreed that there should be two such sessions of one week each, subject to the availability of funds: one in early 1996, to prepare the Report on the State of the World's Plant Genetic Resources and negotiate the Global Plan of Action, as well as review any recent developments relating to the harmonization of the International Undertaking with the Convention on Biological Diversity; the other in late 1996, to continue negotiations for the revision of the International Undertaking.

80. The Commission *agreed* that the extraordinary session to be held in April 1996 should be of six days duration and should entail evening sessions. While the main focus of the meeting would be to finalize preparation for the Technical Conference, an adequate period of time should be devoted to questions relating to the Undertaking to prepare well the substantive negotiations to be held at the extraordinary session, which, it had been agreed, should be held in the second half of 1996. In this connection, some countries suggested that each member should prepare a short statement of its views on the main issues of scope, access and Farmers' Rights, which would facilitate the discussions of the Commission on these points.

81. The Secretariat informed the Commission that in FAO's 1996/97 Programme of Work and Budget, provision had been made for one extraordinary session of two weeks, preceded by a Working Group in 1996, and regular sessions in 1997. The holding of two sessions of one week each would require additional resources. The Commission urged the Secretariat to secure allocation of these resources from the Regular Programme budget of FAO. The need for a clear time-table for completing this process was stressed. If funds were not obtained for a second session from the Regular Programme budget of FAO, the agenda for a single one-week session, to be held in April 1996, would have to be reconsidered to ensure that both issues were definitely addressed, first the Global Plan of Action, and then the revision of the Undertaking.

82. The Commission also reiterated the need for funds to be made available to facilitate the participation of developing countries in the negotiating process. The Commission thanked Canada, Italy and the Netherlands for their contributions and appealed for additional funds for the full participation of developing countries.

83. Other matters relevant to the future work of the Commission were discussed. Sweden informed the Commission that it was considering to host a meeting of experts participating in the negotiations

declaration that might be adopted during the Fourth International Technical Conference (the "Leipzig Declaration"), either as part of the Global Plan of Action or separately, is appended to this report (*Appendix G*). It was understood, however, that further negotiations on the draft Declaration would take place, in particular, during the Extraordinary Session of the Commission in April 1996.

VIII. CONTINUATION OF NEGOTIATIONS FOR THE REVISION OF THE INTERNATIONAL UNDERTAKING

73. The Commission, taking into account the recommendations of its Working Group, decided to undertake a first reading of the preamble and to focus its discussions on Articles 3, 11 and 12 of the International Undertaking, which generated considerable controversy. Formal written proposals made during this session are in the consolidated texts contained in *Appendices* I, J, K and L. The Commission *requested* the Secretariat to review these texts, and integrate them into a single consolidated text, with the texts contained in document CPGR-6/95/7 Rev.1, and make them available by August 1995.

IX. REVISION OF THE TERMS OF REFERENCE AND PROCEDURES OF THE WORKING GROUP, AND ELECTION OF ITS OFFICERS

74. The Commission considered document CPGR-6/95/3, *Draft terms of reference and procedures for the Working Group*. These terms of reference and procedures were prepared at the request of the Commission, and discussed by the Tenth Session of its Working Group. Noting that the issues of the broadening of the Commission, and the possible nature of its Working Group, would be discussed by the FAO Conference in November 1995, the Commission *decided* to postpone consideration of this issue until its next session. It also *decided* in the meantime to allow members of the Commission who are not members of the Working Group to participate, upon request, in the Working Group, in an observer capacity. It *agreed* that experts, as well as representatives of inter-governmental organizations and international non-governmental organizations, could be invited to attend its sessions in an observer capacity.

75. The Commission *agreed* that its Chair should attend all meetings of the Working Group as an *ex officio* member.

76. The Regional Groups announced their nominees for membership of the Working Group, and the Commission elected the new Chair:

Chair: Mr R.S. Paroda (India)

Africa: Ethiopia, Guinea, Lesotho, Madagascar, Morocco

Asia and the Pacific: Australia, India, Japan, Malaysia, Thailand

Europe: France, Germany, Israel, Poland, Sweden.

Latin America and the Caribbean: Brazil, Mexico, Peru, Venezuela

Middle East: Egypt, Iran, Libya

North America: Canada

for the harmonization of the International Undertaking with the Convention on Biological Diversity, and those active in the CGIAR system, to address the issue of access to genetic resources. The Commission was also informed that Brazil was considering the possibility to host a meeting, perhaps under the auspices of FAO, to consider the issues underlying Farmers' Rights as well as technical aspects relating to the possible ways of implementing them.

XI. OTHER BUSINESS

84. The Commission was pleased to see the opening of a server linked to the Internet and *requested* the Secretariat to make Commission documents available through the Internet. The Secretariat agreed to distribute the documents by electronic mail, as well as in printed form, and to consider availability through the Internet.

XII. DATE AND PLACE OF THE NEXT SESSION

85. The Commission *agreed* that its Second Extraordinary Session would be held during the third or fourth weeks of April 1996, in Rome, and the dates for the Third Extraordinary Session would then be decided.

CPGR-6/95/15 E

May 1995

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

Item 9 of the Provisional Agenda

COMMISSION ON PLANT GENETIC RESOURCES

Sixth Session

Rome, 19 - 30 June 1995

RECENT INTERNATIONAL DEVELOPMENTS OF RELEVANCE TO THE DRAFT CODE OF CONDUCT FOR PLANT BIOTECHNOLOGY

W/BIOC • MH

W/W7228

RECENT INTERNATIONAL DEVELOPMENTS OF RELEVANCE TO THE DRAFT CODE OF CONDUCT FOR PLANT BIOTECHNOLOGY

I. INTRODUCTION

1. Genetic resources from all over the world are the raw materials of modern plant biotechnologies, which offer enormous possibilities for the more extensive use of the world's diverse gene pool for agriculture, particularly through genetic engineering.[1] However the rapid advance of plant biotechnological research may also raise uncertainties and possible risks that require analysis, particularly in relation to agriculture in developing countries.

2. The 1991 FAO Council endorsed the Commission's request that FAO draft a Code of Conduct on Biotechnology, as it affects the conservation and use of plant genetic resources, and a draft Code was accordingly prepared and submitted to the Commission. In 1993, the Commission recognized that, while several agencies and institutions are active regarding plant biotechnology and related issues, it is the only international forum for considering matters specific to biotechnology in the context of plant genetic resources for food and agriculture.

3. The aim of the draft Code is to maximize the positive effects and minimize the possible negative effects of biotechnology. It includes aspects such as the promotion of appropriate biotechnologies (Article 5); national action and international cooperation (Articles 6 and 7); the prevention and mitigation of possible negative effects (Article 8); access to plant genetic resources and related biotechnologies, and intellectual property rights and compensation for informal innovators (Article 9); information exchange and early warning (Article 10); and biosafety and other environmental concerns (Articles 11-16).

4. The Commission's Fifth Session discussed the draft Code, making comments and recommendations on specific chapters. It recommended that the biosafety and other environmental concerns component of the draft Code be considered an input to the work of the Governing Body of the Convention on Biological Diversity (CBD) on the matter, and that FAO participate in that work on aspects related to agro-biodiversity. It requested FAO to further develop the other components of the Code, in close collaboration with relevant organizations.

5. The Commission's also indicated that the Working Group should advise the Secretariat whether a revised draft Code should be prepared for the Commission's Sixth Session. The Tenth Session of the Working Group (3-5th May 1995) considered that the Commission's agenda in this session would be very full, and that a number of the themes dealt with in the draft Code were being discussed in the context of the revision of the International Undertaking and the preparation of the Fourth International Technical Conference. It therefore felt it better to defer consideration of a new draft of the Code to a later session, though the Commission's Sixth Session should consider a document to be prepared by the secretariat on developments in biotechnology over the last two years that affect various aspects covered in the first draft Code.

6. This is the purpose of the current document. Section II reviews some recent technical developments in plant biotechnology and provides updated information relevant to the draft Code; section III describes action taken regarding the biosafety component of the draft Code and reviews

[1] Documents CPGR/89/9, CPGR/91/12 and CPGR/93/9 provide more extensive information and discussion of the potential of plant biotechnologies for international agriculture. See also "Biotechnologies in agriculture, forestry and fisheries" (1993) Rome:FAO.

recent technical and policy developments on biosafety matters; and section IV requests the Commission's guidance for follow-up.

II. RECENT DEVELOPMENTS OF RELEVANCE TO THE DRAFT CODE

Recent technical developments in plant biotechnologies

7. The Commission, in its Fifth Session, recognized the importance of the new biotechnologies for increased food production and sustainable agriculture, and their great potential for the conservation and utilisation of plant genetic resources. It agreed to critically examine developments in biotechnology concerning the conservation and sustained, equitable, and efficient use of plant genetic resources for food and agriculture, so that appropriate policy advice could be provided to member countries. The following paragraphs briefly review some recent developments.

8. Biotechnologies based on plant genetic resources are advancing rapidly, faster in developed than in developing countries, with new applications to agriculture appearing every week. These new developments further strengthen countries' interdependence in the conservation and exchange of plant genetic resources.

9. A number of large-scale plant genome projects are rapidly identifying and characterizing various genes of potential use to agriculture. The sequencing of the entire genome of the plant model organism, *Arabidopsis thaliana*, is the most advanced, and expected to be completed by 2004.[2] In the Rice Genome Research Programme, 4,500 of the estimated 30,000 rice genes have now been identified, and a genetic map of the twelve rice chromosomes is almost complete.[3] Genetic maps being developed for some crop species are also expected to allow rapid marker-assisted breeding of complex agronomic traits, by identifying parental contributions to traits of interest.[4] Numerous individual plant genes for a diversity of agronomic traits are being isolated, including, in the past two years, at least nine genes for resistance against fungal, bacterial and viral pathogens (from tomato, tobacco and flax among other plant species)[5].

10. About sixty plant species are reported to have been genetically engineered for a wide variety of characteristics.[6] Some 2000 field trials of transgenic plants, involving 36 crop species, were undertaken in the USA between 1987 and 1994. The main genetic improvements tested were quality (42%), herbicide tolerance (28%), and virus (20%) or insect-resistance (12%).[7] Transgenic plants with increasingly diverse characteristics are becoming available on certain markets: these include herbicide-resistant cotton and soyabean, low-water quick-fry potatoes, extended shelf-life tomatoes, high laurate[8] canola, virus-resistant squash and insect-resistant cotton and maize.[9] Transgenic plants are currently under development for a wide range of characteristics: these include production of pharmaceuticals (such as alpha-tricosanthin or berberine) and vaccines (including anti-hepatitis

---

2 Hemming D. (1994) "Conference Report: 4th International Congress of Plant Biotechnology" AgBiotech News and Information, 6:217N-230N. While *Arabidopsis* is not a crop plant, the identification and functional characterization of many of its genes will facilitate the identification of their agronomically useful counterparts in many crop plants.

3 Stevens J.E. (1994) "Japan picks a winner in the rice genome project" Science, 18 November:1186-1187.

4 The ability to identify parental contributions could make it technically feasible in certain cases to trace the genetic contributions of known parental plant genetic resources to a particular variety. See Document CPGR-6/95/8 Supp., *Appendix 2.*

5 Dangl J.L. (1994) "Pièce de résistance: Novel classes of plant disease resistance genes" Cell, 80:363-366.

6 Schmidt K. (1995) "Whatever happened to the gene revolution" New Scientist, January 7th:21-25.

7 Hemming D., *loc.cit.*

8 Conventional canola does not contain commercial levels of laurate, a valuable fatty acid previously commercially available only from coconut and palm kernel oils.

9 Schmidt K., *loc.cit.*

B), altered oil-constituent levels,[10] plastic production (polyhydroxybutyrate), nutritional enhancement, non-allergenicity, improved mineral uptake, altered lignin content, flower colour, sterility, extended post harvest storage or quality, cold, drought and salinity tolerance, and resistance to viruses, bacteria, fungi, nematodes and insects.[11]

Promotion of appropriate biotechnologies

11. In the context of the draft Code,[12] "appropriate biotechnologies" refers in particular to technologies which promote the development of sustainable agriculture through the rational use of plant genetic resources, while properly considering local culture and techniques. The Commission has recognised that current biotechnological research is concentrated in the industrialised countries, and therefore focuses on their needs and major crops, rather than on local crops and farming systems of great social and economic importance to developing countries.[13] The Commission's Fifth Session therefore highlighted the urgency of meeting the challenges posed by biotechnological applications that might lead to the neglect of crops of local importance.

12. Some potentially appropriate biotechnologies include virus-eradication through tissue culture; diagnostic tests for plant pathogens; the isolation and use of genes for pathogen resistance, drought and salt tolerance, nutrient assimilation and photoperiodicity; and the improvement of staple crops' nutritional qualities. Some recent biotechnological research concentrates on crops important for developing countries' food security, such as cassava,[14] sweet potato[15] and plantain.[16]

13. Some recent plant biotechnology projects aim at reducing external inputs, while maintaining or increasing yields: one example is research for the development of apomictic[17] food crops. Apomixis is a genetically determined trait, whereby certain plants produce seeds asexually. In an agricultural context, apomixis has the potential to fix clonally the characteristics of particularly well adapted cultivars - including hybrids - from generation to generation, while maintaining heterosis. This is not possible with sexual seeds. Progress is being made in developing apomictic food crops, such as maize and millet, by introgressing apomictic traits from wild relatives.[18] The Hunan Hybrid Rice Research Centre in China is seeking to identify sources of apomictic rice germplasm. Progress in the isolation of apomictic genes for future direct transfer into crops without apomictic wild relatives, by genetic engineering, has also been reported.[19]

---

10 Several oils are currently only available from crops that for geo-climatic reasons are not grown in Europe and North America, where the key markets are. Rather than domesticate new temperate crops, such as *Cuphea* and *Umbelliferae* spp., or adapt tropical or subtropical crops, such as oil palm and castor bean, to temperate climates, current research focuses on genetic engineering to introduce genes for the production of these oils into temperate region oilseed crops. For example, there have been initial attempts to genetically engineer oilseed rape to produce oil currently only available from jojoba (*Simmondsia chinensis*) (US Patent No. 5370996).

11 Hemming D., *loc.cit.*

12 Article 3 defines "appropriate biotechnologies".

13 Documents CPGR/93/9 para. 7-8; CPGR/91/12 para. 73,76-78; CPGR/89/9 para. 26-28,38,43-45.

14 Thro A.M., Henry G. and Lynam J.K. (1994) "Biotechnology and small scale farmers" Biotechnology and Development Monitor, 21:18-19; Thro A.M. (1993) "Cassava Biotechnology Network: Research Achievements" Cassava Biotechnology Newsletter, 17:9-10.

15 Prakash C.S. (1994) "Sweet potato biotechnology: Progress and potential" Biotechnology and Development Monitor, 18:18-22.

16 Huggan R.D. (1993) "Are bananas and plantains catching up?" Biotechnology and Development Monitor, 14:14-16.

17 Jefferson R.A. (1994) "Apomixis: A social revolution for agriculture?" Biotechnology and Development Monitor, 19:14-16.

18 A joint project between ORSTOM (Institut français de recherche scientifique pour le développment en coopération) and CIMMYT (Centro Internacional de Mejoramiento del Maiz y del Trigo) for the introgression of apomixis from *Tripsacum* into maize is reportedly nearing completion, while a USDA project is making substantial progress in introgressing apomixis from *Pennisetum squamulatum* into pearl millet.

19 The Centro Internacional de Agricultura Tropical (CIAT) is mapping a single gene locus associated with apomixis in the tropical forage, *Bracharia*. CAMBIA, in Australia, is establishing an international molecular apomixis project, to coordinate and conduct genetic engineering for the development of apomictic food crops.

Prevention and mitigation of possible negative effects

14. The Commission's Fifth Session recognized that there may be negative effects for some farming communities and developing countries, due to the use of certain new biotechnological applications, for example through the substitution of key export commodities. It suggested that the Code help minimise any resultant economic distortions,[20] and recommended that these issues be kept under review and analyzed. Article 8 of the draft Code advocates national and international monitoring of the potential socio-economic impact of agricultural and food biotechnologies, to prevent and mitigate possible negative effects, and Article 10 promotes the information exchange and early warning role of the FAO World Information and Early Warning System (WIEWS).

15. In recent years, a number of international organizations, including the Intermediary Biotechnology Service (IBS),[21] OECD,[22] UNESCO[23] and ILO,[24] have begun to assess biotechnologies in relation to their potential socio-economic impact. Other organizations, including the African Centre for Technology Studies (ACTS) in Kenya, help develop relevant policy formulation capacity, and advise countries on appropriate biotechnology policies. The Research and Information Centre for the Non-aligned and other Developing Countries (RIS), in India, provides information on economic issues related to biotechnology. The Rural Advancement Foundation International (RAFI) monitors biotechnology developments for their potential negative environmental or socio-economic impacts.[25] The International Development Research Centre (IDRC), in Canada, operates joint programmes with some Latin American countries, to assess the potential impact of biotechnologies. Both the International Programme on Rice Biotechnology[26] and the Cassava Biotechnology Network[27] contain modules on impact assessment.

16. However, even when potentially negative impacts of agro-biotechnologies for some developing countries have been identified, this has infrequently led to the establishment of effective mitigation mechanisms, at national or international levels, such as foreseen in Articles 8 and 10.3 (on the role of the WIEWS in monitoring possible adverse effects) of the draft Code. Other mechanisms that may help prevent and mitigate possible negative effects include consumer information provisions, the labelling of genetically-engineered products, and civil liability regulations. These are not covered in the draft Code, and the Commission may wish to advise on their possible integration.

---

20 Documents CPGR/93/9 Para. 8;CPGR/91/12 Para. 80-83; CPGR/89/9 Para. 32-33,36-37,45.

21 Komen J. (1993a) "The Intermediary Biotechnology Service" Biotechnology and Development Monitor, 17:18-19; The Intermediary Biotechnology Service (IBS) was established at ISNAR by an international group of donor agencies, to act as an independent advisory service on issues of biotechnology research management, information exchange, institution building, policy formulation and the assessment of the socio-economic impact of biotechnologies. The IBS has a collaborative project with Giessen University (Germany) and the Federal Institute of Technology (Switzerland) to assess the potential socio-economic impact of new plant biotechnologies on cocoa production and competitiveness.

22 Brenner C. and Komen J. (1994) "International initiatives in biotechnology for developing countries agriculture: Promises and problems" Technical Paper No. 100, OECD Development Centre.

23 Sasson A. and Costarini V. (eds.) (1991) "Biotechnologies in Perspective" UNESCO:Paris.

24 Galhardi R. (1993) "Employment and Income Effects of Biotechnology in Latin America: A speculative assessment" Geneva:International Labour Office; Ahmed I. (*ed.*) (1992) "Biotechnology: A hope or a threat?" UK:Macmillan.

25 Pistorius R. (1993) "RAFI after 15 years" Biotechnology and Development Monitor, 17:22.

26 Van Roozendaal G. (1993) "The International Program on Rice Biotechnology" Biotechnology and Development Monitor, 15:20-21.

27 Thro *et al., loc.cit.*

Access to plant genetic resources and related technologies: Intellectual Property Rights and compensation for informal innovators

17. The Commission[28] has expressed the view that intellectual property rights should not become an obstacle to the exchange of germplasm, information or technology for scientific purposes,[29] and that intellectual property rights systems for plant genetic resources should be equitable and take into account the rights of informal innovators, including farmers. These issues (which are considered in the draft Code) are currently under discussion within the context of the revision of the International Undertaking.[30]

18. Since the Commission's Fifth Session, there have been a number of important discussions and agreements on policy matters related to intellectual property rights of relevance to the conservation and utilization of plant genetic resources, particularly in the context of the International Union for the Protection of New Varieties of Plants (UPOV),[31] and the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) within the Uruguay Round of the General Agreement on Tariffs and Trade (GATT), which both contain provisions on the protection of plant varieties and biotechnological innovations.[32]

19. The draft Code aims at facilitating access to plant genetic resources, and balancing the rights of formal and informal innovators. It also deals with the re-use by farmers of seed from their own harvests, generally permitted in plant breeders' rights systems, as the "farmer's privilege". The 1978 UPOV Convention provided for the farmer's privilege as the rule; the 1991 UPOV Convention, however, does not provide for the farmer's privilege, unless specifically established by national legislation.[33] Article 14 of the 1991 Convention strengthened the variety holder's rights, by modifying the "breeder's exemption" (which allows the use of protected varieties, without compensation to the holder of varietal rights, for the purpose of breeding new varieties) by requiring the permission of the variety holder for the registration of an "essentially derived variety".

20. Countries may ratify either the 1978 or the 1991 Convention until 31 December 1995, and afterwards only the 1991 Convention. Argentina, Austria and Uruguay have recently joined UPOV under the 1978 Convention, while Mexico is preparing to do so. Chile, Paraguay, Portugal, the Russian Federation[34] and the Ukraine have submitted their legislations for examination, preparatory to joining UPOV under the 1978 Convention. In 1993, by Decision 345 of the Commission of the Junta of the Cartagena Agreement, the Andean Pact Countries (Bolivia, Colombia, Ecuador, Peru and Venezuela) approved a common plant breeders' rights statute,[35] which represents a true regional protection system, and Colombia subsequently submitted its legislation to UPOV for examination, preparatory to joining under the 1978 Convention.[36]

---

28 Documents CPGR/89/Rep para. 50 and CPGR/91/Rep para. 100.

29 When twelve CG Centres in 1994 placed their germplasm collections under the auspices of FAO, it was with the provision that recipients of germplasm they had "designated" may not seek intellectual property protection over the material, and that the same provision be imposed upon subsequent recipients (see document CPGR-Ex1/94/Inf.5 Add. 1).

30 Documents CPGR-6/95/Inf. 1, CPGR-6/95/7, CPGR-6/95/Inf 2, CPGR-6/95/8, CPGR-6/95/8 Supp., CPGR-6/95/9).

31 The UPOV Convention (for membership see *Appendix 2*) applies plant breeders' rights to approximately 30,000 protected varieties, in 27 countries.

32 Document CPGR-Ex1/94/5 Supp. para. 25-36.

33 The 1991 Convention also strengthened the variety holder's rights by modifying the "breeder's exemption", which allows the use of protected varieties, without compensation to the holder of varietal rights, for the purpose of breeding new varieties. Article 14 of the 1991 Convention requires the permission of the variety holder for the registration of an "essentially derived variety".

34 Russian Federation legislation allows the farmer's privilege for two years.

35 Jaffe W. and Rojas M. (1994) "Attempt to implement the Biodiversity Convention in the Andean region" Biotechnology and Development Monitor, 21:5.

36 Brazil also has a plant breeders' rights law under discussion in parliament (Jaffe W.R. (1994) "Agricultural biotechnology policies in Latin America and the Caribbean" AgBiotech News and Information, 6:237N-241N).

21. Countries that have acceded to the 1991 UPOV Convention have slightly differing legislations. For example, the European Community Plant Variety Rights (1994) Regulation and the US Plant Variety Protection Act (1994) differ in their provisions regarding the farmer's privilege.[37] The USA and the EC allow patenting of genetically engineered plants or animals, but in the EC plant varieties cannot be patented. Patents covering all genetically engineered plants of particular species (cotton and soyabean) have been awarded (and subsequently contested) in the USA,[38] while the European Parliament rejected a proposed EC directive on patent harmonisation for biotechnological inventions in March 1995.[39]

22. Article 27.3 (b) of the TRIPS Agreement (1994) requires all members to protect plant varieties either by means of patents or an "effective *sui generis* system", or by a combination of both.[40] It specifically provides that members may exclude "plants" and "animals" (other than micro-organisms) from patentability, however the recent EC draft legislation, and actual US legislation, would both allow the patenting of plants and "parts of plants".

23. The Commission's current discussions, in the context of the revision of the International Undertaking (especially on access to plant genetic resources and related technologies, including consideration of intellectual property rights and the realization of Farmers' Rights), may assist countries to identify and analyze the advantages and disadvantages of patenting crops. They may also help countries assess the appropriateness of instituting *sui generis* systems for the protection of agricultural plant varieties, in the light of their specific agro-ecological, economic and social conditions, as no single reward-system for agricultural innovation is likely to be appropriate for all countries, at all times. (For instance, with the development of its member countries' agriculture, UPOV has found it necessary progressively to modify the original 1961 Convention, in 1978, and in 1991). Countries may then decide upon appropriate and optimal reward-systems for agricultural plant-related innovation, which confer intellectual property rights (through patents, a *sui generis* system, or a combination of both) in a way that promotes access to germplasm and maintains agro-biodiversity,[41] while encouraging research and breeding activities.[42]

24. In considering the establishment of "effective *sui generis* systems" at the national level, some developing countries are considering the inclusion of mechanisms to realize Farmers' Rights: for instance, proposed legislation in India envisages returning a share of royalties on seed sales to a fund for strengthening farmers' plant genetic resource activities.[43]

25. The Commission's current negotiations on the revision of the International Undertaking may also provide useful input to the deliberations of the WTO TRIPS Council, and facilitate international consensus on the criteria for "effective *sui generis* systems" for the protection of agricultural plant-related innovations.

---

37 Both EC and US legislation allow farmers to re-use proprietary seed on their own holdings. EC Regulation No. 2100/94 requires equitable remuneration be paid to the breeder for this right and applies to a list of plant species. There is an exemption from remuneration payment for farmers producing less than a certain tonnage (92 tonnes for cereals). While US farmers may save seed for replanting, they cannot sell seed for reproductive purposes without the breeder's permission, or royalty payments ("Congressional Passage of New PVP Law a Triumph for Seed Industry" (1994) Diversity 10:34-35).

38 Mestel R. (1994) "Cotton patent left hanging by a thread" New Scientist, 17 December:4; Lehrman S. (1994) "Soy-bean patent comes under fire as threat to research" Nature, 372:488.

39 O'Brien C. (1995) "European Parliament axes patent policy" Science, 267:1417-1418.

40 Article 27.3 (b) is the only Article in the Agreement that must reviewed four years after entry into force of the WTO Agreement (1 January 1995). For further discussion of the TRIPS agreement, see documents CPGR-6/95/8 Supp. para. 25-41 and Background Study Paper No. 2.

41 Community Regulation 2078/92, on "Agricultural production methods compatible with the requirements of the protection of the environment and the maintenance of the countryside", provides for annual incentive payments to farmers who maintain useful plants adapted to local conditions and threatened by genetic erosion, or endangered breeds of farm animals, on the basis of the area involved.

42 The scope of the "research exemption" under patent law, and the "breeders' exemption" under UPOV, could be considered in this context. For an analysis of the "research exemption", and proposals to review it, see: "Intellectual Property Rights: Protection of Plant Materials",(1993) Madison:Crop Science Society of America Special Publication No. 21.

43 "India: Vigorous public debate over expanding seed legislation" (1994) Asian Seed, 1:3-5.

International cooperation and technology transfer

26. The importance of international cooperation is underlined in Article 7 of the draft Code: the identification and effective transfer to developing countries of appropriate plant biotechnologies remains a major challenge.

27. There are an increasing number of international plant agro-biotechnology programmes.[44] Many deal primarily with crop research, but some provide support and advice on biotechnology research management, such as priority setting, product development, technology assessment and transfer, biosafety and intellectual property rights.

28. These programmes involve *funding organisations*, such as UNDP, the Rockefeller Foundation, the McKnight Foundation, USAID and the Netherlands' Directorate General for International Cooperation (DGIS); *crop research networks*[45] *and programmes*, including FAO,[46] the International Programme on Rice Biotechnology,[47] REDBIO, the Asian Rice Biotechnology Network,[48] the Cassava Biotechnology Network[49] and the Asia Network for Small-scale Agricultural Biotechnologies (ANSAB); *international and regional research institutes*, including the CGIAR Centres, the International Centre for Genetic Engineering and Biotechnology (ICGEB),[50] the Centre de coopération en recherche agronomique pour le développement (CIRAD),[51] the International Laboratory for Tropical Agricultural Biotechnology (ILTAB),[52] the Agricultural Biotechnology for Sustainable Productivity project (ABSP),[53] the United Kingdom Overseas Development Administration (ODA) Plant Sciences Research Programme[54] and the African Biosciences Sub-Network for Biotechnology (ABN-BIOTECHNET);[55] *broker organisations*, such as the ISAAA;[56] and *programmes concentrating on policy and management issues*, run by organizations such as the Inter-American Institute for Cooperation on Agriculture (IICA),[57] the IBS, ACTS, RIS and RAFI.

29. Agricultural biotechnology transfer programmes vary in their approach; most are technology-driven[58] but demand-driven participatory technology development approaches have recently emerged.[59] Some examples of this approach are the UNDP/FAO farmer-centred agricultural resource management programme (FARM),[60] which works with resource-poor farmers[61] to

---

44 Cohen J.I. and Komen J. (1994) "International agricultural biotechnology programmes: Providing opportunities for national participation" AgBiotech News and Information, 6:257N-267N.

45 For further information on crop-specific networks supported by FAO, see Document CPGR-6/95/5.1, *Appendix 1*.

46 See *Appendix 1* of this Document.

47 Van Roozendaal G., *loc.cit.*

48 Van Roozendaal G., *loc.cit.*

49 Thro *et al.*, *loc.cit.*

50 Komen J. (1993b) "ICGEB coming of age" Biotechnology and Development Monitor, 14:21.

51 Schwendiman J., Diem H.G. and Lefevre P.C. (1994) "CIRAD and biotechnology" AgBiotech News and Information, 6:269N-272N.

52 Cohen J.I. and Komen J., *loc. cit.*

53 Komen J. (1993c) "New Initiative Links US Universities and Companies to Developing Country Partners" Biotechnology and Development Monitor 15:22; ABSP was established as a follow-up to USAID's Tissue Culture for Crops Project in the USA. It facilitates biotechnology transfer, by working with developing country scientists to solve specific agricultural problems.

54 Cohen J.I. and Komen J., *loc.cit.*

55 *Ibid.*

56 Altman D.W. (1994), *loc.cit.*

57 *Ibid.*; IICA has a regional programme (PROCISUR) on technology generation and transfer, cooperative research and development, and information exchange, to assist Latin American countries in policy matters relating to agricultural biotechnology.

58 Altman D.W. (1993a) "Plant biotechnology transfer to developing countries" Current Opinion in Biotechnology, 4:177-179.

59 This approach is presented in Scoones I. and Thompson J. (*eds.*) (1994) "Beyond Farmer first: Rural Peoples' Knowledge, Agricultural research and Extension Practice" London:Intermediate Technology; and in De Boef W., Amanor K., Wellard K. and Bebbington A. (*eds.*) (1993) "Cultivating Knowledge: Genetic Diversity, Farmer Experimentation and Crop Research" London:Intermediate Technology.

60 Document CPGR-6/95/5.1 para. 38.

identify appropriate biotechnologies for transfer, and the biovillage concept of the M.S. Swaminathan Research Foundation in India, which attempts to diffuse appropriate biotechnologies in rural areas.[62] Another approach, promoted by the International Service for the Acquisition of Agri-biotech Applications (ISAAA), involves acting as an "honest broker", to match proprietary agricultural biotechnologies to developing countries' needs.[63]

30. A recent IBS survey of forty-five organisations involved in agricultural biotechnology transfer revealed that most transfer initiatives concentrate on the few developing countries with relatively advanced scientific and technological capabilities,[64] and that developing country scientists and administrators are not always directly involved in planning and designing them. This may result from a concentration on advanced biotechnology training opportunities at doctoral and post-doctoral level.[65]

31. During discussion of the draft Code at its Fifth Session, the Commission requested to be informed about the FAO Plant Biotechnology Programme, and recommended that it particularly emphasize the training of scientists and technicians, and increasing policy makers' understanding (especially in developing countries) of the need to develop and adopt appropriate biotechnologies. Information on FAO's Plant Biotechnology Programme is provided in *Appendix 1*.

III. FAO'S INPUT TO THE POSSIBLE CBD PROTOCOL ON BIOSAFETY, AND RECENT DEVELOPMENTS IN AGRO-BIOSAFETY

32. The draft Code contained a chapter on biosafety and other environmental concerns. The Commission's Fifth Session noted that the Intergovernmental Committee of the CBD was to consider the possible development of a biosafety protocol, and recommended that, in order to avoid duplication, the "biosafety and other environmental concerns" component of the preliminary draft Code constitute an input to the work of the governing body of the CBD, and that FAO participate in this work to ensure that plant genetic resources for food and agriculture were appropriately covered.[66]

33. Following the Commission's recommendation, the relevant chapter was transmitted to the CBD Secretariat, and FAO expressed its readiness to cooperate in developing a protocol on the safe transfer, handling and use of living modified organisms resulting from biotechnology, which may have adverse effects on the conservation and sustainable use of biodiversity. As decided by the 1994 Conference of the Parties to the CBD, FAO will assist an expert group to be established in 1995 to prepare a background document for the possible protocol.[67] At the request of the CBD Secretariat, a focal point has been designated within FAO.

---

[61] About 1,400 million people are dependent on resource-poor farming systems (Chambers R. in "Beyond Farmer First: Rural Peoples Knowledge, Agricultural research and Extension Practice", (1994) Scoones I and Thompson J. (eds.) London:Intermediate Technology, p. xiii).

[62] Dhar B. and Pandey B. (1994) "Biovillages in India: An attempt to diffuse biotechnology in rural areas" Biotechnology and Development Monitor, 18:16-17; in the Netherlands, the Centre for Low-External Input and Sustainable Agriculture (ILEIA) and the Centre for International Research and Advisory Networks (CIRAN) promote low external input sustainable agricultural systems, and the use of indigenous knowledge in relation to agricultural development, respectively.

[63] Altman D.W. (1994) "Technology transfer initiatives of the International Service for the Acquisition of Agri-biotech Applications" AgBiotech News and Information, 6:131-134; Knudsen H. (1993) "ISAAA: Proprietary technology for small farmers?" Biotechnology and Development Monitor, 14:12-13.

[64] Reported by IBS to be Kenya, Zimbabwe and Egypt in Africa; Indonesia, Thailand and India in Asia; and Costa Rica, Mexico and Brazil in Latin America.

[65] Brenner C. and Komen J., *loc.cit.*

[66] An earlier UNEP Expert Panel report stated that the possible protocol "does not include organisms modified by traditional breeding methods" (Expert Panels Established to Follow up on the Convention on Biological Diversity, Report of Panel IV, UNEP/Bio.Div./Panels/Inf. 1, 28 April 1993).

[67] The open-ended *ad hoc* group of experts on safety in biotechnology will consider, *inter alia*, existing knowledge and experience of risk assessment and management, and guidelines and/or legislation already prepared by governments and by national and competent sub-regional, regional and international organisations.

conducted.[76] It is estimated that at least 42 trials of transgenic plants took place between 1989 and 1993 in Latin America.[77]

40. Biosafety regulations for release of genetically modified organisms have recently been established, in many developed countries, but only in a few developing countries. Mexico, Chile, Argentina, Brazil, Costa Rica, Bolivia, Nigeria, Zimbabwe and Cuba, among others, have either established *ad hoc* biosafety committees, or are drafting relevant regulations.

41. In the light of these considerations, and its request at its Fifth session (see para. 33), the Commission may wish to provide further guidance on how FAO and the Commission itself may ensure that biosafety issues related to plant genetic resources for food and agriculture are adequately addressed, through cooperation with the CBD in the development of its possible protocol.

IV. GUIDANCE REQUESTED FROM THE COMMISSION

42. The Commission may wish to indicate when the next draft of the Code should be presented to the Commission.

43. The Commission may also wish to make recommendations on the various matters covered in this document, particularly in para. 16, 22-25, 30 and 41.

---

[76] *Ibid.*

[77] Jaffe W.R., *loc.cit.*

34. The following paragraphs identify some recent developments regarding bio-safety that may be relevant to agricultural aspects of the possible CBD protocol on biosafety and to FAO's contribution to its development, as requested by the Commission.

35. Many factors need consideration in assessing risks specific to agriculture associated with the introduction of transgenes into crop species. These include their potential for crossing with wild relatives, invasiveness, weediness, toxicity and allergenicity, and the possibility of selecting for novel virulent pathogens.[68]

36. Recent studies of the risk of transgenes "escaping" from a transgenic crop into the gene pool of its wild relatives suggest that such risks need to assessed separately for each species and region involved, perhaps through an analysis of the potential for gene-flow between the crop and its wild relatives in the area (particularly in its centres of agro-diversity).[69] The geographical distribution of wild relatives influences the risk. For instance, although potato (*Solanum tuberosum*) cannot hybridise with its most common wild relatives in Europe, it can in the Andean region.[70] Similarly, where maize and teosinte are found in proximity to each other, low levels of two-way gene-flow occur, despite introgression: however, the limited geographical distribution of teosinte means that the risk of transgenes escaping from maize into teosinte only exists in a limited geographical range. The risks associated with transgenic crop species with more broadly distributed wild relatives (such as *Sorghum bicolor* and the weed *Sorghum halapense*) are potentially greater. In this context, it is worth noting that transgenic plants are now being developed where the transgenes are only inherited maternally, through the cytoplasm, which will lessen the risk of transgene "escape", through pollen, into wild relatives.[71]

37. The invasiveness of a plant is another important factor in assessing risk. One study of the invasiveness of transgenic oilseed rape lines indicated no significant differences in their invasiveness in natural habitats, when compared to their conventionally bred counterpart.[72] In the case of transgenic crops with herbicide-resistance genes, the possible introgression of such transgenes from the crop to related weed species could increase their invasiveness, by making them herbicide-resistant.

38. Recent experiments have demonstrated that transgenes derived from viral genomes, when expressed in transgenic plants for the purpose of crop protection, have the potential to recombine with other related viruses infecting that crop, in the presence of a selection pressure for the interaction event, potentially resulting in new viral strains.[73]

39. The number of reported trials of transgenic crops continues to increase: some 3,000 field trials have now been reported throughout the world.[74] Between 1987 and 1994, approximately 2,000 such field trials, involving 36 crop species or microbes, were conducted in the USA alone.[75] In Europe, by 1994, 190 field trials (mainly of four crops: oilseed rape, maize, potatoes and sugarbeet) were

---

[68] "Proceedings of the pan-European conference on the potential long-term ecological impact of genetically modified organisms" (1993) Strasbourg:Council of Europe.

[69] Doebley J. (1990) "Molecular evidence for gene flow among Zea species." BioScience 40:443-448. A related factor is the potential for the transgene in question to become fixed in the wild relative population through selection.

[70] Eulander R. and Stiekama W.J. (1994) "Biological containment of potato (*Solanum tuberosum*) outcrossing to the related wild species, black nightshade (*Solanum nigrum*) and bittersweet (*Solanum dulcamara*)." Sexual Plant Reproduction, 7:29-40.

[71] Svab Z. and Maliga P. (1993) High frequency plastid transformation in tobacco by selection for a chimeric *aadA* gene. Proc. Natl. Acad. Sci. USA, 90:913-917.

[72] Crawley M.J., Haila R.S., Rees M., Kohn D. and Buxton J. (1993) "Ecology of transgenic oilseed rape in natural habitats" Nature, 363:620-623. The authors also commented on the fact that some non-transgenic plants such as bermuda grass (*Cynodon dactylon*) have become invasive weeds, citing Ellstrand N.C. and Hoffmann C.A. (1990) "Hybridisation as an avenue of escape for engineered genes." Bioscience, 40:438-442.

[73] Hull R. and Gibbs M. (1994) "Risks in using transgenic plants?" Science, 264:1649-1651.

[74] Schmidt K., *loc.cit.*

[75] Hemming D., *loc.cit.*

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

Item 5 of the Provisional Agenda

COMMISSION ON PLANT GENETIC RESOURCES

Sixth Session

Rome, 19 - 30 June 1995

COOPERATION IN THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY ON MATTERS OF INTEREST TO THE COMMISSION ON PLANT GENETIC RESOURCES

CONTENTS

COOPERATION IN THE IMPLEMENTATION OF THE CONVENTION ON BIOLOGICAL DIVERSITY ON MATTERS OF INTEREST TO THE COMMISSION ON PLANT GENETIC RESOURCES

I. INTRODUCTION

1. FAO's activities in support of the negotiations for the Convention on Biological Diversity have been reported to the Commission at its earlier sessions. Further cooperation from FAO was specifically requested in Resolution 2 annexed to the Nairobi Final Act (Nairobi, June 1992), especially in connection with the establishment and operation of the Interim Secretariat of the Convention, as well as in Resolution 3 in connection with the inter-relationship between the Convention on Biological Diversity and the promotion of sustainable agriculture. The present document describes the cooperation that FAO has extended to the Convention on Biological Diversity, its Secretariat and Governing Bodies in response to these resolutions, from the last regular session of the Commission in April 1993 up to March 1995.

II. MAIN AREAS OF COOPERATION

1. Cooperation with the Interim Secretariat

2. FAO provided the services of an FAO legal officer, as part of the Interim Secretariat, during the two sessions of the Intergovernmental Committee on the Convention on Biological Diversity (Geneva, 11-15 October 1993, and Nairobi, 20 June-1 July 1994). FAO also liaised closely with the Interim Secretariat in the preparation of documents.

2. Reporting to the Inter-governmental Committee of the Convention on Biological Diversity[1] and the Conference of the Parties

3. At its Fifth Session, the Commission on Plant Genetic Resources recognized the importance of close cooperation with the governing body of the Convention and "*recommended* that this cooperation should include mutual reporting under specific agenda items in their respective Regular Sessions" (Report, para. 34).

4. FAO submitted progress reports on the follow-up to Resolution 3 of the Nairobi Final Act to both sessions of the Intergovernmental Committee of the Convention on Biological Diversity. In expressing appreciation for FAO's report, the second session invited FAO to submit a similar progress report to the first Conference of the Parties.

5. The report to the first Conference of the Parties was made available to the First Extraordinary Session of the Commission, 7-11 November 1994, as information document CPGR-Ex1/94/Inf. 4, *Progress made on Resolution 3 of the Nairobi Final Act: Ex Situ Collections and Farmers' Rights*. The Commission noted that FAO had already transmitted the report to the Parties to the Convention through its Interim Secretariat, since the First Session of the Conference of the Parties was taking place in early December. It agreed that the report of its First Extraordinary Session, and document CPGR-Ex1/94/5 Supp., *Revision of the International Undertaking: Analysis of Some Technical, Economic and Legal Aspects for Consideration in Stage II*, should also be transmitted as information documents.

[1] As of 5 April 1995 117 countries have ratified the Convention. See Appendix 1.

6. The First Extraordinary Session of the Commission agreed that in the future documents submitted to the Conference of the Parties should be reviewed and discussed first by the Commission. The next session of the Conference of the Parties will meet in Indonesia, 6-17 November 1995; the Session is expected to discuss the medium-term programme of work adopted by the First Session which includes a number of items relevant to the Commission on Plant Genetic Resources, including one on the relationship with the FAO Global System on Plant Genetic Resources for food and agriculture (see para. 13 below). No indication has yet been received from the Secretariat as to the type of contribution or report expected from FAO and its Commission on Plant Genetic Resources. The Commission may wish to guide the Secretariat on how to proceed, as no further session of the Commission is scheduled before the Second Conference of the Parties meets.

3. Participation in the Secretariat of the Convention on Biological Diversity

7. In August 1994, FAO officially informed the Interim Secretariat of the Convention on Biological Diversity of its interest in participating, together with other international organizations, in a joint permanent secretariat. FAO made the following offers[2]:

- to second one or two professionals to the Permanent Secretariat;
- to maintain permanent liaison with it, through appropriate internal mechanisms; and
- to carry out specific tasks, at the request of the Conference of the Parties, on mutually agreed terms.

The text of the FAO proposal was submitted to the First Extraordinary Session of the Commission on Plant Genetic Resources (7-11 November 1994), which expressed its firm support.

8. The first Conference of the Parties designated UNEP to carry out the functions of the Secretariat of the Convention. During the Conference, FAO offered to second to the Secretariat of the Convention, at FAO's expense, the staff member who would be responsible for agricultural matters. A similar offer was made by UNESCO. The Conference of the Parties welcomed the concrete offers made by FAO and UNESCO to support and cooperate with the Secretariat, including the secondment of staff, and requested the Executive Secretary to coordinate with those organizations, with a view to entering into such administrative and contractual arrangements as might be required to make these offers effective, as provided for under Article 24.1(d) of the Convention (see Appendix 2). Negotiations on the implementation of these offers are under way.

4. Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA)

9. The first meeting of the Subsidiary Body will be held at UNESCO, Paris, from 4 to 8 September 1995. It will consider its *modus operandi* and the need to draw on relevant existing institutional structures and will prepare a proposal for a medium-term programme of work, for the consideration of the second Conference of the Parties. Point 5.5.2 of the provisional agenda for the First Meeting of the SBSTTA reads as follows: "How can the Convention on Biological Diversity contribute to the preparation for the forthcoming International Technical Conference on the Conservation and Utilization of Plant Genetic Resources for Food and Agriculture in 1996?"[3]. The Commission may wish to identify areas where such contribution may be needed.

---

[2] A more detailed description of FAO's offer is contained in document CPGR-Ex1/94/Inf.8, *Participation of FAO in the Secretariat of the Convention on Biological Diversity*.

[3] UNEP/CBD/COP/1/17

5. Clearing House Mechanism

10. Article 18, para. 3 of the Convention provides that the clearing house mechanism will promote and facilitate technical and scientific cooperation, including through the provision of information. The Secretariat was asked to prepare concrete and costed recommendations for the establishment of the mechanism, drawing on all relevant existing institutional structures (including, for example, databanks such as FAO's, on plant, animal, forestry and fishery genetic resources). Following an invitation from the Convention Secretariat, FAO participated at a Secretariat meeting on the subject on 30 and 31 March 1995. The item will be on the Agenda of the second Conference of the Parties.

11. Within the context of the FAO Global System on Plant Genetic Resources, the World Information and Early Warning System on Plant Genetic Resources (WIEWS) could provide a useful contribution by complementing the Convention's clearing house mechanism on matters related to plant genetic resources for food and agriculture. The relationship between the clearing house mechanism and the WIEWS may need to be further developed.

6. Medium-Term Programme of Work of the Conference of the Parties, 1995-1997

12. During the debate on this item at the first session of the Conference of the Parties, FAO reported on progress made in the implementation of Resolution 3 of the Nairobi Final Act, covering both plants and animal genetic resources.

13. The Conference of the Parties adopted a Medium-Term Programme of Work for the period 1995-1997 (see Appendix 3), and decided to review it at its next Session, in the light of progress in the implementation of the Convention. The Medium-Term Programme includes a number of items relevant to FAO and its Commission on Plant Genetic Resources. For 1995, these include:

- item 2.6 (relationship of the Convention with other biodiversity-related conventions, international agreements, institutions and processes); this is expected to include the relationship with the International Undertaking on Plant Genetic Resources;
- item 5.4 (access to genetic resources), and item 5.5 (access to and transfer of technology); this is relevant to the current negotiations on the revision of the Undertaking;
- item 5.6 (need for and modalities of a possible protocol on biosafety); this is relevant to the FAO Code of Conduct on Biotechnology (see para. 14 and 15 below); and more specifically
- item 5.9 (relationship with the FAO Global System for Plant Genetic Resources for Food and Agriculture, including sub-items on the revision of the International Undertaking, on the preparation for the Fourth International Technical Conference, and on *ex situ* collections of plant genetic resources).

The Commission may wish to discuss its possible contributions to the Conference of the Parties and its Secretariat on matters related to plant genetic resources for food and agriculture in this Programme of Work.

7. Possible Protocol on Biosafety

14. In the context of its Medium-Term Programme, the Conference of the Parties also decided to establish an open-ended intergovernmental *ad hoc* group of experts, to consider the need and modalities of a protocol for the transfer, handling and use of any living modified organism resulting from biotechnology that may have adverse effects on the conservation and sustainable use of biodiversity. The open-ended intergovernmental group of experts will meet in Spain in 1995. The report of the Group of Experts should allow the second Conference of the Parties to reach an informed decision on the need for and modalities of such a protocol. The Conference requested its Secretariat, in order to prepare a background document for the meeting, to establish a panel of fifteen experts nominated by

governments, with equitable geographical representation, in consultation with the Bureau of the Convention, and with the assistance of UNIDO, UNEP, FAO and WHO.

15. At the request of the Commission on Plant Genetic Resources at its Fifth Session, FAO transmitted to the Secretariat of the Convention on Biological Diversity the biosafety elements of the draft Code of Conduct on Biotechnology discussed at that session, as an input to the possible protocol. The Commission also recommended "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". Following an invitation from the Secretariat of the Convention, FAO has designated a focal point within its Secretariat to assist the Secretariat of the Convention in the organization of the panel of experts and the preparation of background documentation. (See para. 28 and 29 of CPGR-6/95/4).

8. Preparation of the Participation of the Convention on Biological Diversity in the Third Session of the Commission on Sustainable Development

16. The Conference of the Parties discussed and agreed on the statement to be made to the Third Session of the Commission on Sustainable Development (CSD). It is based on the report of an intergovernmental expert consultation convened by the Government of Spain in Madrid in October 1994, with FAO's participation. The statement includes information on the ongoing negotiations within FAO for the revision of the International Undertaking on Plant Genetic Resources, in harmony with the Convention. It also stresses the desirability "to coordinate efforts carried out in both fora, in order to collaborate, and to avoid overlapping in the respective fields of competence of FAO and the Convention on Biological Diversity".

III. GUIDANCE REQUESTED FROM THE COMMISSION ON PLANT GENETIC RESOURCES

17. The Commission may wish to discuss and guide its Secretariat on matters related to continuing cooperation and follow-up, especially in relation to para. 6, 11, 13 and 15 above.