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CONFERENCE OF THE PARTIES  
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## MEDIUM-TERM PROGRAMME OF WORK OF THE CONFERENCE OF THE PARTIES

Progress report by the Food and Agriculture Organization of the  
United Nations (FAO) on work being carried out by the Commission  
on Plant Genetic Resources to implement resolution 3 of  
the Nairobi Final Act

Note by the Interim Secretariat. At its second session, the Intergovernmental Committee on the Convention on Biological Diversity agreed that "in order to ensure cooperation and complementarity with the work being carried out by the Commission on Plant Genetic Resources to implement resolution 3 of the Nairobi Final Act, FAO should be invited to present a progress report on this subject to the first Conference of the Parties" (UNEP/CBD/COP/1/4, para. 233(i)). In response to that invitation, FAO has prepared a progress report, which the Interim Secretariat is pleased to transmit to the first meeting of the Conference of the Parties as an annex to the present note.

First Session of the Conference of the Parties to the  
Convention on Biological Diversity  
Nassau, The Bahamas, (28 November - 9 December 1994)

PROGRESS REPORT ON RESOLUTION 3 OF THE NAIROBI FINAL ACT:  
EX SITU COLLECTIONS AND FARMERS' RIGHTS

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PROGRESS REPORT ON RESOLUTION 3 OF THE NAIROBI FINAL ACT:  
*EX SITU* COLLECTIONS AND FARMERS' RIGHTS:

I INTRODUCTION

1. The Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity, that met in Nairobi in May 1992, adopted, together with the text of the Convention, a complementary resolution on the "Interrelationship between the Convention on Biodiversity and the Promotion of Sustainable Agriculture" (Resolution 3 of the Nairobi Final Act; see Annex 1). This resolution "urges that ways and means be explored to develop complementarity and cooperation between the Convention on Biological Diversity and the Global System" and noted the "need to seek solutions to outstanding matters concerning plant genetic resources within the Global System for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture<sup>1</sup>, in particular:

- a) access to *ex situ* collections not acquired with this Convention; and
- b) the question of farmers' rights<sup>2</sup>."

2. In following up on these matters, the FAO Conference, at its twenty-seventh session, in November, 1993, welcomed Resolution 3 of the Nairobi Final Act and unanimously adopted Resolution 7/93, "Revision of the International Undertaking on Plant Genetic Resources" (see Annex 2), which *inter alia* requested the Director-General to provide a forum for negotiations among governments for:

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

In its Resolution, the FAO Conference urged that the process be carried out through the Commission on Plant Genetic Resources, with the help of its Working Group, in close collaboration with the Governing Body of the Convention on Biological Diversity.

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1 FAO has developed, since 1983, a Global System for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture, which encompasses, *inter alia*, the International Undertaking on Plant Genetic Resources, and the Commission on Plant Genetic Resources (see paras 9 to 12). Agenda 21, adopted in June 1992 by the United Nations Conference on Environment and Development (UNCED), called for the strengthening of the FAO Global System on Plant Genetic Resources, and its adjustment in line with the outcome of negotiations on the Convention on Biological Diversity, as well as for the realization of Farmers' Rights.

2 "Farmers' Rights" are defined in FAO Resolution 5/89 (the second annex to the Undertaking) as "rights arising from the past, present and future contributions of farmers in conserving, improving and making available plant genetic resources (...)" (see section IV).

3. FAO subsequently reported to the First Session of the Intergovernmental Committee on the Convention on Biological Diversity (ICCBD), in October 1993, and to the Second Session, in June and July 1994, on progress made in the follow-up to Resolution 3 of the Nairobi Final Act. In the ICCBD, there was strong general support for the renegotiation process of the International Undertaking, and for bringing the revised Undertaking within the framework of the Convention, possibly in the form of a protocol. It was stressed that the Conference of the Parties should provide guidance in the interpretation and further development of the issues raised by Resolution 3. The efforts to bring the *ex situ* collections held by the International Agricultural Research Centres under the auspices of FAO was also strongly supported. The ICCBD also agreed that, "in order to ensure cooperation and complementarity with the work being carried out by the Commission on Plant Genetic Resources to implement Resolution 3 of the Nairobi Final Act, FAO should be invited to present a progress report on this subject to the first Conference of the Parties". The present report responds to that request. It analyzes the situation, and matters to be resolved regarding the two outstanding issues identified in Resolution 3 of the Nairobi Final Act, within the context of the Convention on Biological Diversity and the FAO Global System .

## II BACKGROUND

4. This section provides background information on the Convention on Biological Diversity relevant to the two outstanding issues of *ex situ* collections and Farmers' Rights and on the FAO Global System within which it was agreed in Resolution 3 that solutions to the two issues should be sought.

### II.1 The Convention on Biological Diversity in Relation to the Two Issues

5. The objectives of the Convention on Biological Diversity (as set out in Article 1) are "the conservation of biological diversity, the sustainable utilization of its components, and the fair and equitable sharing of the benefits arising out of the utilization of genetic resources by appropriate access to genetic resources, and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to those technologies, and by appropriate funding".

6. Provisions on access are set out in Article 15. The Convention reaffirms "the sovereign rights of States over their natural resources", and states that "the authority to determine access to genetic resources rests with the national governments and is subject to national legislation" (Article 15.1). The Convention elaborates on this provision in three important ways.

- It states that Parties "shall endeavour to create conditions to facilitate access to genetic resources", and "not ... impose restrictions which run counter to the objectives of this Convention" (Article 15.2).
- It strengthens the power of Parties to implement their sovereign rights by requiring that access "shall be subject to [the] prior informed consent" of the country providing the resources "unless otherwise determined by that party" (Article 15.5), and that "access, where granted, shall be on mutually agreed terms" (Article 15.4).
- It provides for the sharing of benefits derived from genetic resources with the country of origin, or the country providing such resources where they have been acquired in accordance with the Convention (Articles 15.7, 16.3, 19.1 and 19.2).

7. However Article 15, paragraph 3, of the Convention, states that, "For the purpose of this Convention, the genetic resources being provided by a Contracting Party, as referred to in this Article and Articles 16 and 19, are only those that are provided by Contracting Parties that are countries of origin of such resources or by Parties that have acquired the genetic resources in accordance with this Convention". This means that the provisions on sharing the benefits, and for prior informed consent to access, do not apply to *ex situ* collections which are located outside the country of origin, and which were acquired prior to the entry into force of the Convention. This issue was, therefore, one of the two identified as outstanding in Resolution 3 of the Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity.

8. The second issue identified as outstanding in Resolution 3 was "the question of farmers' rights". Article 1 of the Convention specifies that in meeting its objectives by "appropriate access to genetic resources", and "appropriate transfer of relevant technologies", "all rights over those resources and to technologies" should be taken into account (see para. 5 above). However, while the Convention refers to the sovereign rights of states, and to the intellectual property rights of the holders of technology, it does not refer to Farmers' Rights<sup>3</sup>. The concept of Farmers' Rights, as developed in the FAO Global System (see section IV below), recognizes the role of farmers in conserving, improving, and making available plant genetic resources. It has been agreed that these rights will be implemented, *inter alia*, through an international fund. The concept of Farmers' Rights might therefore be considered as relevant to the Convention's provisions for the sharing of benefits and for funding (Articles 15.7 and 20). These benefits include access to, and transfer of, technology which makes use of the genetic resources provided (Article 16.3); participation in biotechnological research using such genetic resources (Article 19.1); and priority access to the results and benefits arising from such biotechnological research (Article 19.2). These benefits are consistent with those specified in the FAO Resolutions on Farmers' Rights (see section IV of this document).

## II.2 FAO and the Global System

9. Following its Constitutional mandate, FAO deals with the conservation and sustainable utilization of genetic resources of interest to food and agriculture, including forestry and fisheries. Genetic resources of interest to food and agriculture represent both the raw material used in the production of new plant cultivars and animal races - either through traditional breeding or the use of biotechnology - and a reservoir of genetic agricultural adaptability, which acts as a buffer against harmful environmental changes. Their erosion severely increases agriculture's vulnerability and threatens world food security. FAO's work in this field, which started early in the 50's has become more systematic since 1983, with the establishment of the FAO Global System for the Conservation and Utilization of Plant Genetic Resources for food and agriculture and later development of other initiatives for animal and fish biodiversity. Information on related matters concerning domestic animal genetic resources is provided in annex 5<sup>4</sup>. The responsibilities of FAO in supporting the

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3 Article 8 (j) specifies the need to "respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities (...)" but does not specifically refer to Farmers' Rights.

4 Although not covered in the operative part of Resolution 3 of the Nairobi Final Act, reference to animal genetic resources is made in the preamble.

implementation of the Convention on Biological Diversity, which includes under its coverage biodiversity for food and agriculture, have been fully recognized by governments in adopting the agreed text of the Convention, in Resolution 2 and 3 of the Nairobi Final Act, and by the FAO governing bodies.

10. In 1983 the member countries of FAO established a permanent intergovernmental forum on plant genetic resources: the Commission on Plant Genetic Resources (CPGR), and a legal framework: the International Undertaking on Plant Genetic Resources. Since then the development of a Global System on Plant Genetic Resources for food and agriculture has been coordinated, overseen and monitored by the CPGR. The objectives of this Global System are to ensure the safe conservation, and promote the availability and sustainable utilization of plant genetic resources for present and future generations, by providing a flexible framework for sharing the benefits and burdens. The System covers the conservation (*ex situ* and *in situ*) and utilization of plant genetic resources (genes, genotypes and gene pools). In addition to the Commission and the Undertaking, the Global System includes networks of germplasm collections and conservation areas, a World Information and Early Warning System, and codes of conduct related to germplasm collecting and management, as well as periodical analyses of the situation of the world's plant genetic resources, and Global Plans of Action. The first State of the World and Global Plan of Action on Plant Genetic Resources<sup>5</sup>, are being developed through a country-driven process that will lead to the Fourth International Technical Conference on Plant Genetic Resources, planned by FAO for 1996. To date, 140 countries are formally part of the Global System, of which 122 are members of the Commission and 110 have adhered to the International Undertaking. Agenda 21 recommended the strengthening of the Global System and the further development of many of its components<sup>6</sup>.

11. The International Undertaking was adopted by the FAO Conference Resolution 8/83 with the reservations of eight countries<sup>7</sup>. It was the first

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5 The FAO Conference noted that the preparation of these documents and the revision of the International Undertaking should be regarded as integral parts of one process (see para 36).

6 Chapter 14 on "Sustainable Agriculture and Rural Development" (SARD) includes a Programme Area on the "Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture". At the international level, Agenda 21 indicates that the appropriate United Nations agencies and regional organizations should strengthen the Global System on the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture by *inter alia*: accelerating the development of the World Information and Early Warning System on Plant Genetic Resources, to facilitate the exchange of information; developing ways to promote the transfer of environmentally sound technologies in particular to developing countries; and taking further steps to realize Farmers' Rights; developing networks of Plant Genetic Resources for Food and Agriculture in *in situ* protected areas; preparing periodic State of the World Reports on Plant Genetic Resources for Food and Agriculture and a rolling Global Plan of Action on Plant Genetic Resources Food and Agriculture; promoting the Fourth International Technical Conference on Plant Genetic Resources to adopt the first State of World Report and the Global Plan of Action, and adjusting the global system to bring it into line with the Convention on Biological Diversity.

7 Canada, France, Germany, Japan, New Zealand, Switzerland, United Kingdom and the United States of America.

comprehensive international agreement concerning plant genetic resources. The Undertaking which is not legally binding seeks to "ensure that plant genetic resources of economic and/or social interest, particularly for agriculture, will be explored, preserved, evaluated and made available for plant breeding and scientific purposes." In order to overcome the reservations to the Undertaking, it has been further qualified and interpreted by a number of complementary resolutions which were negotiated by countries<sup>8</sup> through the Commission on Plant Genetic Resources, and adopted unanimously by the FAO Conference, and which are now annexes to the Undertaking. The first such resolution (4/89) provided an agreed interpretation of the Undertaking which recognized that Plant Breeders' Rights as provided by the Union for the Protection of New Varieties of Plants (UPOV) convention of 1978, were not inconsistent with the Undertaking. It simultaneously recognized "Farmers' Rights" which were defined in a second resolution (5/89). A third resolution (3/91) reaffirmed that the concept of heritage of mankind is subject to the sovereign rights of nations over their genetic resources and agreed that Farmers' Rights will be implemented through an international fund. Finally, in Resolution 7/93 countries agreed that the Undertaking would be revised (see para 2). A Global Plan of Action is being developed in a related process (for plant genetic resources see para 36).

12. The Undertaking, in its Article 7, provides for the establishment of an international network of *ex situ* germplasm collections (The state of development of this network is described in Annex 3).

III. THE ISSUE OF ACCESS TO EX SITU COLLECTIONS NOT ACQUIRED IN ACCORDANCE WITH THE CONVENTION

13. By "Ex situ collections" is meant collections of germplasm held outside their natural habitats<sup>9</sup>. Most major *ex situ* collections of crop genetic resources are in the form of seeds held in dry, cold storage conditions. *Ex situ* collections can also include field plantings (such as botanical gardens or arboreta), pollen held in cold storage, tissue cultures, or seed, pollen or tissues held under cryogenic storage (-150° to -196°C).

14. All existing collections which are located outside of the country of origin<sup>10</sup>, and which existed at the time of the entry into force of the Convention on Biological Diversity, in December 1993, are, by definition, collections which were not acquired in accordance with the Convention, and provisions for access to these collections are excluded in the Convention (Article 15.3 of the Convention and paragraph 7 above). These collections are, however, covered by the FAO International Undertaking and Global System.

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8 It should be noted that in these negotiations Member and non-Member Countries of the CPGR participated actively, including both countries which had signed the International Undertaking and countries which had not, as well as non-member Nations of FAO.

9 The Convention defines "Ex situ conservation" as "the conservation of components of biological diversity outside their natural habitats" (Article 2).

10 "Country of Origin of genetic resources" is defined in the Convention on Biological Diversity as the "country which possesses those genetic resources in *in situ* conditions" (Article 2).

### III.1 Nature, size and importance of ex situ collections

15. Worldwide holdings of crop germplasm in ex situ collections (including wild relatives) amount to about 4.4 million accessions, including over two million cereal accessions. (See Table 1.) The number of unique samples is much smaller than this, because many accessions have been duplicated to different locations.

16. Germplasm collections have been established in about 130 countries. Over half (50.4 %) of the accessions are located in developed countries, one third (38 %) in developing countries, and about 11.6 % in the international centres. However, it is estimated that about 35% of the unique samples are held in the International Centres of the Consultative Group on International Agricultural Research: these, therefore, probably comprise the world's most significant collections. International support has been particularly important in establishing ex situ collections.

17. There is no doubt that existing ex situ collections are of particular importance, especially in the case of plant genetic resources for food and agriculture. For agricultural crops, ex situ collections have been the primary means of conservation, and these have generally been readily accessible to breeders and scientists. In fact, for certain major crops, they may represent, for all practical purposes, nearly all of the world's remaining diversity. Moreover, the actual and potential value of these collections, for the crops concerned, is generally considered to be higher than that of the diversity not yet collected. It was not by chance that this germplasm was selected, given priority and attention, and funds made available for collection and storage, and, in many cases, characterization, documentation and exchange. However, while there is no doubt that ex situ collections of plant genetic resources have an economic value, it is difficult to estimate that value, because no effective market for plant genetic resources operates.

18. Internationally agreed standards for the storage of seeds in genebanks (as well as for their exchange and distribution) have been developed by FAO and IPGRI, and endorsed by the FAO Commission on Plant Genetic Resources.<sup>11</sup> Most genebank managers aim to meet them, but it is not known, however, what proportion of accessions are, in fact, maintained to these standards. The lack of resources very often makes it difficult for genebank managers to maintain standards of conservation, regenerate aged seed, and document, characterize and adequately evaluate accessions. Inadequate or non-standard documentation can severely limit the usefulness of genetic resource collections.

19. In order to have more accurate estimates of the importance and value of these collections, many technical issues require further investigation. These include the following:

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11 Genebank Standards, FAO/IPGRI, 1994.



TABLE 1  
EX SITU COLLECTIONS: BY GROUPS OF CROPS<sup>1</sup>

Crop	National Collections	CGIAR Centres	Total	% of Total <sup>2</sup>
Cereals	1,750,200	317,200	2,067,400	46.82
Food legumes	600,200	118,150	718,350	16.27
Forages	374,450	50,900	425,350	9.63
Vegetables	336,600	--	336,600	7.62
Fruit	174,400	--	174,400	3.95
Roots and tubers	157,400	22,450	179,850	4.07
Oil crops	89,750	--	89,750	2.03
Fibre crops	70,300	--	70,300	1.59
Beverages	42,900	--	42,900	0.97
Rubber	30,500	--	30,500	0.69
Miscellaneous	17,350	--	17,350	0.39
Sugarcane	16,700	--	16,700	0.38
Narcotics and drugs	14,650	--	14,650	0.33
Condiments, spices, flavourings, herbs	10,050	--	10,050	0.23
Shelter crops	9,600	--	9,600	0.22
Chocolate crops	8,750	--	8,750	0.20
Ornamentals	4,550	--	4,550	0.10
Medicinal plants	2,950	--	2,950	0.07
Dyes	1,023	--	1,023	0.02
Perfume crops	550	--	550	0.01
Building materials	400	--	400	0.01
Weeds	17	--	17	0.00
Timber crops	10	--	10	0.00
Unknown	191,900	--	191,900	4.34
Banana		1,500 <sup>3</sup>	1,500	0.03
Multipurpose trees		300 <sup>3</sup>	300	0.01
<b>TOTAL</b>	<b>3,905,200</b>	<b>510,500</b>	<b>4,415,700</b>	<b>100.0</b>

<sup>1</sup> According to the species groupings in WIEWS/PGR; data as in May 1994.

<sup>2</sup> Figures do not add up to 100 due to rounding.

<sup>3</sup> The CGIAR Centres class bananas and multipurpose trees as separate categories. In the case of national collections, they are subsumed into other categories and not reported separately.

- i. What proportion of the existing diversity of the relevant crops is represented in *ex situ* collections?
- ii. What proportion comprises landraces and farmers' varieties, and what proportion comprises varieties developed through formal plant-breeding?
- iii. What is the actual value (monetary or non-monetary) that can be attached to these *ex situ* collections?
- iv. How many accessions, in the various collections, have been characterized, evaluated and documented? What is the value added by these activities?
- v. How are the collections conserved?
- vi. What proportion of these collections has been exchanged and used?
- vii. What proportion of them has been duplicated and stored in other places?
- viii. For what proportion of them is the country of origin known?
- ix. What has been the socio-economic impact of the use of these collections?

With the technical assistance of IPGRI, FAO is studying these issues. The results of these studies will be brought to the attention of the Commission on Plant Genetic Resources, for its consideration.

20. There are also a number of non-technical issues to be considered. For example, few of the international collections have a guaranteed funding base. This applies equally to the International Agricultural Research Centres and to national programmes, though of course, developing country programmes face particular funding difficulties. The funding of the International Agricultural Research Centres, for example, is dependent on yearly pledges by donor countries. Other non-technical issues concern to the ownership and legal status of plant genetic resources in *ex situ* collections.

### III.2 Ownership and legal status of *ex situ* collections

21. In the 1980s, the FAO governing bodies discussed the ownership of the material maintained in genebanks. This material was generally the result of international cooperation, often collected in the main areas of diversity of cultivated species, usually located in developing countries, and stored in genebanks, and these were largely located in industrialized countries. Many countries raised questions as to whether this material belonged to the country where it was collected or the country or institution where it was stored, or to humankind.

22. A study prepared by the FAO Legal Office in 1987, at the request of the Commission, showed that, regardless of where the material may have been collected, the ownership of genetic material held in government genebanks, or in those of public institutions, was, in most cases, for practical purposes, considered to be vested in the States in which these genebanks are located. However, for material held in the International Agricultural

Research Centres (IARCs) the legal position was unclear<sup>12</sup>. There were also, of course, *ex situ* collections of plant genetic resources held by private corporations, but little information about these collections was available.

23. The Commission on Plant Genetic Resources found this situation unsatisfactory. It noted that many of the collections had been made on the basis of agreements at the operational level, which provided that the material collected would be freely available, but considered these informal agreements to be insufficient. The Commission therefore called for the implementation of Article 7.1(a) of the International Undertaking in relation to the development of an "international network of base collections in genebanks under the auspices and/or jurisdiction of FAO". Countries and institutions which voluntarily decide to place the collections in their genebanks within this network agree to ensure that the genetic material is safely conserved, and will be made available for plant breeding and research purposes, while respecting the rights of the providers of germplasm. Further information on the network, including the state of progress on its implementation, and ongoing negotiations with the International Agricultural Research Centres, is given in Annex 3.

### III.3 Matters to be resolved

24. The Convention on Biological Diversity left unresolved the question of the legal status of existing *ex situ* collections located outside the country of origin. In line with the request in Resolution 3 of the Nairobi Final Act, the Commission on Plant Genetic Resources, at its Fifth Session in 1993, considered the implications of the Convention, and took note of the following possible interpretations of this situation:

- "(i) that these genetic resources were outside the Convention, and, since most of them were collected on the general understanding that Plant Genetic Resources were the heritage of mankind, these resources should continue to be freely available, with a global compensatory mechanism;
- "(ii) that these genetic resources were outside the Convention, and therefore that the host country could legislate on ownership and conditions of access; and
- "(iii) that, since Parties to the Convention can provide only those genetic resources originating in their own countries, or acquired under the terms of the Convention, that the permission of the country of origin is required for the release of genetic resources from pre-existing collections. It was noted, however, that, in many cases, countries of origin cannot be identified, and that the collections are widely dispersed".

It was agreed that these interpretations needed further discussion. Figure 1 groups *ex situ* collections according to the origin of samples and the location of their storage, showing the complexity of the situation.

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12 The 1987 study (FAO: CPGR/87/5) showed that the available charters and legal documents of the IARCs of the Consultative Group on International Agricultural Research did not generally contain explicit provisions governing the ownership of plant genetic resources. The lack of legal provisions in the documents under which IARCs have been established generates an element of uncertainty regarding ownership. The IARCs have since developed their policy on these matters, based on the concept that the material is held "in trust" for the international community.

25. The Commission on Plant Genetic Resources suggested that there were a number of options, which should not be regarded as mutually exclusive, and which might be explored within the Global System, including:

- "(i) the facilitation of bilateral agreements between countries of origin, when they can be identified, and countries holding *ex situ* collections, for the sharing of the benefits;
- "(ii) the establishment of agreements between FAO and the owners of genebanks, including provisions on access, along the lines of the 'model basic agreements', as agreed at the fourth session of the Commission; and
- "(iii) the facilitation of a comprehensive multilateral agreement concerning access to *ex situ* collections, including mechanisms to compensate countries of origin, possibly in the context of the proposed revision of the Undertaking". It should be noted that where countries of origin cannot be identified, compensation might be provided to developing countries collectively.

26. The Commission agreed that these issues will be discussed as part of the negotiations to revise the International Undertaking on Plant Genetic Resources and this was endorsed by the FAO Conference through Resolution 7/93 as FAO's follow-up to Resolution 3 of the Nairobi Final Act.

#### IV. THE ISSUE OF FARMERS' RIGHTS

##### IV.1 Origin of the Concept of Farmers' Rights

27. The concept of Farmers' Rights resulted from debates in FAO concerning the asymmetric treatment given to donors of germplasm and donors of technology. A commercial variety is usually the product of applying breeders' technologies to farmers' germplasm, and while the former may generate returns through Plant Breeders' Rights, or other intellectual property rights legislation, no system of compensation for the providers of germplasm was operational<sup>13</sup>. These debates finally led to the simultaneous and parallel international recognition of Plant Breeders' and Farmers' Rights in 1989. This recognition is included in Resolutions 4/89, 5/89 and 3/91, which were negotiated by the Commission, and unanimously approved by more than 160 countries in the FAO Conference, in 1989 and 1991.

28. Resolution 4/89 recognizes "the enormous contribution that farmers of all regions have made to the conservation and development of plant genetic resources, which constitute the basis of plant production throughout the world, and which form the basis for the concept of Farmers' Rights".

29. Resolution 5/89 defines Farmers' Rights as "rights arising from the past, present and future contribution of farmers in conserving, improving and making available plant genetic resources, particularly those in the

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13 The concept of Farmers' Rights is even more important and more urgent following the agreement on TRIPs in the GATT Uruguay Round. The TRIPs agreement will oblige parties to it - that is nearly all countries, developing as well as developed - to protect the rights of commercial breeders and biotechnologists, and their companies, and to ensure that they can claim and receive royalties on new seeds and other related products, through patents, plant breeders' rights, or *sui generis* systems.

centres of origin/diversity. These rights are vested in the International Community, as trustees for present and future generations of farmers, for the purpose of ensuring full benefits of farmers and supporting the continuation of their contributions".

#### IV.2 Objectives of Farmers' Rights

30. The concept of Farmers' Rights forms the basis of a formal recognition and reward system, intended to encourage and enhance the continued role of farmers and rural communities in the conservation and use of plant genetic resources. This interpretation aims at reconciling the views of the "technology-rich" and the "gene-rich" countries, in order to ensure the availability of plant genetic resources within an equitable system.

31. Resolution 5/89 endorses the concept of Farmers' Rights, "for the purpose of ensuring full benefits to farmers, and supporting the continuation of their contributions, as well as the attainment of the overall purposes of the International Undertaking". The same Resolution further defines these objectives, as being to:

- "ensure that the need for conservation is globally recognized and that sufficient funds for these purposes will be available;
- "assist farmers and farming communities, in all regions of the world, but especially in the areas of origin/diversity of plant genetic resources, in the protection and conservation of their plant genetic resources, and of the natural biosphere; and
- "allow farmers, their communities, and countries in all regions, to participate fully in the benefits derived, at present and in the future, from the improved use of plant genetic resources, through plant breeding and other scientific methods".

32. It is therefore envisaged that the implementation of Farmers' Rights could:

- ensure that farmers, farming communities and their countries, receive a just share of the benefits derived from plant genetic resources (which they have developed, maintained and made available); and thereby
- provide incentives and means for the conservation and further development of these plant genetic resources by farmers, and through cooperation between farmers, breeders and the national and international research services. Farmers' Rights is not just a question of justice and equity, but also of ensuring that the genetic resources on which we all depend are conserved and continue to be made available.

#### IV.3 Means to implement and monitor Farmers' Rights: the role of an international fund for plant genetic resources

33. Some developing countries are considering the inclusion of a national mechanism for Farmers' Rights as part of the development of national *sui generis* Plant Breeders' Rights legislation, following the TRIPS agreement of the Uruguay Round of multilateral trade negotiations. However, to be fully successful, the implementation of Farmers' Rights needs international action. This is because, in every country, most of the

germplasm used in agriculture comes from other countries. According to recent studies, any region of the world is dependent on genetic material which originated in other regions for over 50% of its basic food production, and, for several regions of the world, such dependency is close to 100%.

34. This is why the Governing Bodies of FAO have agreed that an international fund will be established for Farmers' Rights. Resolution 4/89 considers that "the best way to implement the concept of Farmers' Rights is to ensure the conservation, management and use of plant genetic resources, for the benefit of present and future generations of farmers. This could be achieved through appropriate means, monitored by the Commission on Plant Genetic Resources, including in particular the International Fund for Plant Genetic Resources". In fact Resolution 3/91 endorsed:

- "that Farmers' Rights will be implemented through an international fund on plant genetic resources which will support plant genetic conservation and utilization programmes, particularly, but not exclusively, in the developing countries";
- "that the effective conservation and sustainable utilization of plant genetic resources is a pressing and permanent need and therefore the resources for the international fund as well as for other funding mechanisms should be substantial, sustainable and based on the principles of equity and transparency"; and
- "that, through the Commission on Plant Genetic Resources, the donors of genetic resources, funds and technology will determine and oversee the policies, programmes and priorities of the fund and other funding mechanisms, with the advice of the appropriate bodies".

35. With respect to the use of the international fund, Resolution 4/89 states that "The International Fund should be used to support plant genetic conservation, management and utilization programmes, particularly within developing countries, and those which are important sources of plant genetic material. Special priority should be placed on intensified educational programmes for biotechnology specialists, and strengthening the capabilities of developing countries in genetic resource conservation and management, as well as the improvement of plant breeding and seed production".

36. The Commission on Plant Genetic Resources agreed, in 1993, that the technical and financial needs to ensure conservation, and to promote the sustainable use of the world's plant genetic resources, should be determined and quantified through a country-driven process, whereby the First Report on the State of the World's Plant Genetic Resources and the Global Plan of Action on Plant Genetic Resources would be developed for the Fourth International Technical Conference on Plant Genetic Resources. It agreed that the Global Plan of Action would identify the activities, project and programmes needed to overcome present constraints, in line with the relevant parts of Agenda 21. A Trust Fund project has been established in FAO to proceed through a participatory process to the production of these two documents, under the guidance of the Commission and its Working Group (see annex 4). By financing the Global Plan of Action, through the international fund, and other funding mechanisms, as foreseen in Resolution 3/91, the international community would contribute to the practical realization of Farmers' Rights.

#### IV.4 Other discussions on the concept of Farmers' Rights

37. At UNCED, governments agreed on Agenda 21. In the programme area, "Conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture", (Chapter 14, programme area G), governments called, *inter alia*, for further steps to be taken to realize

Farmers' Rights. The Conference secretariat estimated the average total annual cost of implementing the activities of this programme area at about \$600 million, including about \$300 million from the international community on grant or concessional terms.

38. At a more informal level, the discussions and consensus reached by the participants at the Keystone International Dialogue on Plant Genetic Resources are significant, since the participants, although attending in their personal capacities, reflected all the interests concerned, including Governments, industry, non-governmental and intergovernmental organizations. This meeting was followed by a consultation organized in Stockholm, in January 1992, by the Swedish Agency for Research Cooperation with Developing Countries (SAREC), which involved government experts from Asia, Africa, Europe and the Americas, as well as participants from international bodies. At these meetings the concept of Farmers' Rights and its implementation through an international fund was supported. Estimates of the size of the fund required, ranging from US\$ 300 - 500 million per annum, and some proposals for its governance were made.<sup>14</sup>

#### IV.5 Matters to be resolved

39. At its Fifth Session, the Commission "agreed, however, that a number of questions remain open and would need to be addressed. These include:

- "the nature of the funding (voluntary or mandatory);
- "the question of linkage between the financial responsibilities and the benefits derived from the use of plant genetic resources, and

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14 The Second Session of the Keystone International Dialogue, Madras, 1990, agreed to propose that "the best way of recognizing Farmers' Rights would be a mandatory fund", and that "there should be a compulsory funding mechanism". It also stated that for an International Fund for Plant Genetic Resources, a "conservative estimate indicates that at least US\$ 500 million per annum should be available to begin to meet these urgent needs". The Third and Final Session of the International Dialogue, in Oslo in 1991, proposed a "Global Initiative for the Security and Sustainable Use of Plant Genetic Resources", including a fund for plant genetic resources. The financial estimates previously made was reviewed, and it was concluded that "a minimum of \$1.5 billion of additional funds [would] be needed during 1993-2000". The Dialogue report emphasized that the fund "should be established on a sustainable basis", and that "it should not be taken from existing development assistance budgets and not be subject to erratic or unreasonable fluctuations". The international consultation of experts from governments, intergovernmental organizations, non-governmental organizations and private industry was convened by the government of Sweden through SAREC to follow up the Keystone recommendations and make specific proposals for the UNCED process. This consultation reiterated the need for a fund for the conservation and utilization of plant genetic resources, to complement existing activities, and based on an agreed global plan of action. If the fund were established under the Convention on Biological Diversity, it was proposed that for plant genetic resources, as for other components of biodiversity, the fund should be operationally separate, and managed by an international agency with competence in the relevant area. The FAO Commission on Plant Genetic Resources was identified as an appropriate body for decision-making on global policy issues, programmes and priorities with regard to the conservation and utilization of plant genetic resources.

- "the question of who should bear financial responsibilities (countries, users or consumers).

"It also remained to be determined:

- "how the relative needs and entitlements of beneficiaries, especially developing countries, were to be estimated, and
- "how farmers and local communities would benefit from the funding".

40. These questions should be addressed by the Commission during the negotiating process foreseen in Resolution 7/93. When operative, the concept of Farmers' Rights, together with the international fund to implement it, and the Global Plan of Action on Plant Genetic Resources, will provide mechanisms for compensation, and for the fair and equitable sharing of benefits with countries providing genetic resources for food and agriculture.

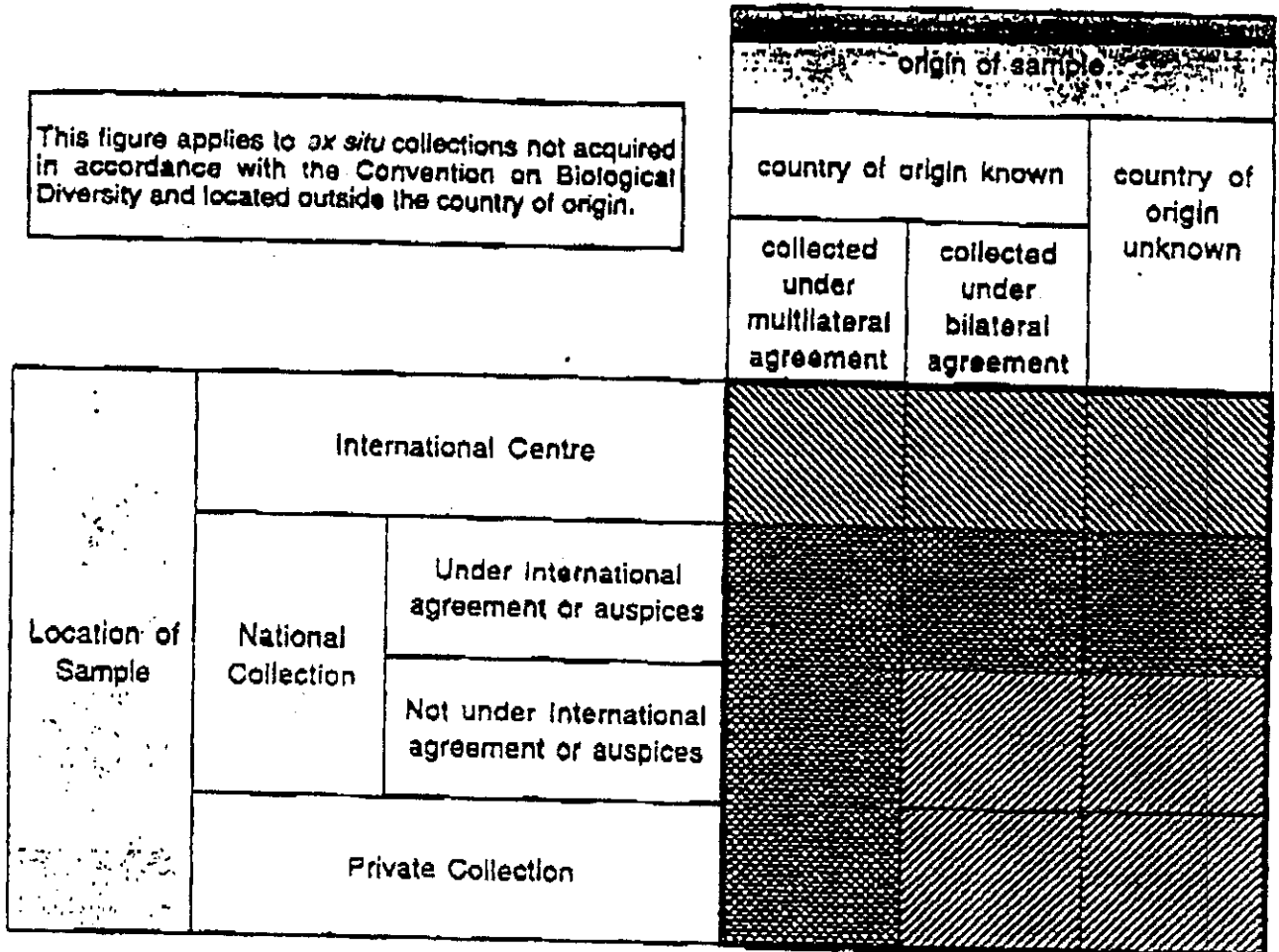
## V CONCLUSIONS

41. As noted above (para 2.) the FAO Conference in 1993 welcomed Resolution 3 of the Nairobi Final Act and, through resolution 7/93, initiated a process to address the issues of access to *ex situ* collections not acquired in accordance with the Convention, and of Farmers' Rights, in the context of the revision of the International Undertaking on Plant Genetic Resources. As requested by the FAO Conference, negotiations between Governments will be carried out in a step-by-step manner in the Commission on Plant Genetic Resources and its Working Group. The Conference requested that progress be reported to the FAO Governing Bodies and to the Intergovernmental Committee for the Convention on Biological Diversity, and once established, to the Conference of the Parties of the Convention. The Commission on Plant Genetic Resources at its Fifth Session in 1993, noted that "at a later stage, FAO might, if it were requested, convert the revised Undertaking into a binding legal instrument, and that this might take the form of a protocol to the Convention. The Commission emphasised that the decision whether or not to transform the Undertaking into a protocol to the Convention would have to be taken at a later stage, by the Conference of the Parties to the Convention, and that the first steps of the process of revising the Undertaking should not pre-empt this later decision." Parallel to the revision of the Undertaking, and complementary to it, a costed Global Plan of Action is being developed as part of the preparatory process for the Fourth International Technical Conference on Plant Genetic Resources. The Global Plan of Action will be developed through a "bottom-up", country-driven process. The FAO Conference has emphasized that the revision of the Undertaking, and the development of the Global Plan of Action, should be regarded as an integral process. The FAO Secretariat will continue to report on progress made on these matters to the Conference of the Parties to the Convention on Biological Diversity.



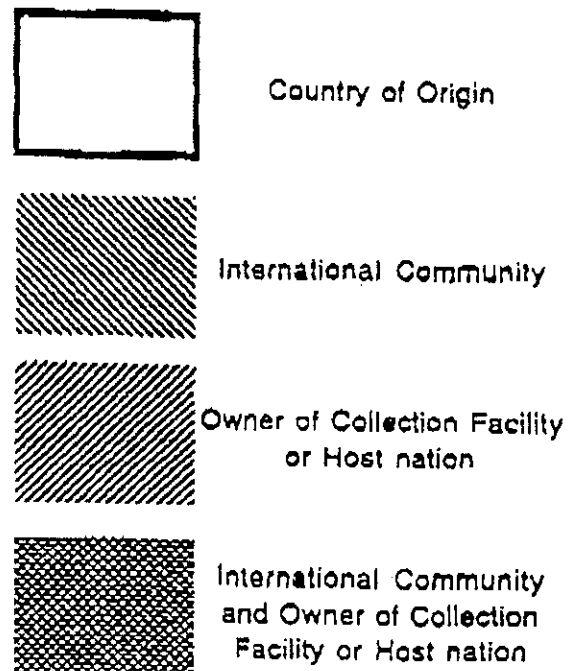
**Figure 1: Interests in *ex situ* collections, according to the origin, agreement under which collected, and location, of samples**

This figure applies to *ex situ* collections not acquired in accordance with the Convention on Biological Diversity and located outside the country of origin.



This figure presents diagrammatically the various interests that countries of origin of plant genetic resources for food and agriculture; the owners of collection facilities and host nations; and the international community; may have over material currently in *ex situ* collections. In the case where the country of origin is known, a distinction is shown between material collected under bilateral and multilateral agreements. In the latter case, the material was collected under international auspices, or with international funding, sometimes under agreements that specified that the material collected should be freely available for breeding and research purposes. The figure also distinguishes the various locations of storage, which may be in international centres, including the IARCs; national, publicly owned or controlled collections; or private collections. As a result of this complex situation, many interests are involved. the national interest of the country of origin exists in all cases. When the country of origin is unknown, possible countries of origin have a potential interest. In the absence of information on origin, the international community may be the repository of such interests. Other interests include the national interests of the country hosting a collection facility, private interests, and the interests

Interests involved



Annex 1

*Resolution 3 of the Conference for the Adoption of the Agreed Text  
of the Convention on Biological Diversity*

**THE INTERRELATIONSHIP BETWEEN THE CONVENTION ON BIOLOGICAL DIVERSITY AND  
THE PROMOTION OF SUSTAINABLE AGRICULTURE**

The Conference,

Having agreed upon and adopted the text of the Convention on  
Biological Diversity at Nairobi on 22 May 1992,

Recognizing the basic and continuing needs for sufficient food,  
shelter, clothing, fuel, ornamental plants and medicinal products for  
peoples of the world,

Emphasizing that the Convention on Biological Diversity stresses the  
conservation and sustainable use of biological resources,

Recognizing the benefits from the care and improvement by the peoples  
of the world of animal, plant and microbial genetic resources to supply  
those basic needs and from the institutional research on and development of  
those genetic resources,

Recalling that broadly-based consultations in international  
organizations and forums have studied, debated and achieved consensus on  
urgent action for the security and sustainable use of plant genetic  
resources for food and agriculture,

Noting that the Preparatory Committee of the United Nations  
Conference on Environment and Development has recommended that policies and  
programmes of priority for *in-situ*, on-farm and *ex-situ* conservation and  
sustainable use of plant genetic resources for food and sustainable  
agriculture, integrated into strategies and programmes for sustainable  
agriculture, should be adopted not later than the year 2000 and that such  
national action should include *inter alia*:

- (a) Preparation of plans or programmes of priority action on  
conservation and sustainable use of plant genetic resources  
for food and sustainable agriculture based, as appropriate,  
on country studies on plant genetic resources for food and  
sustainable agriculture;
- (b) Promotion of crop diversification in agricultural systems  
where appropriate, including new plants with potential value  
as food crops;
- (c) Promotion of utilization of, as well as research on, poorly  
known but potentially useful plants and crops, where  
appropriate;
- (d) Strengthening of national capabilities for utilization of  
plant genetic resources for food and sustainable agriculture,  
plant breeding and seed production capabilities, both by  
specialized institutions and farmers' communities;
- (e) The completion for the first regeneration and safe  
duplication of existing *ex-situ* collections on a world-wide  
basis as soon as possible; and
- (f) The establishment of *ex-situ* base collection networks,

Noting further that the Preparatory Committee for the United Nations Conference on Environment and Development has recommended:

- (a) The strengthening of the Global System for the Conservation and sustainable Use of Plant Genetic Resources for Food and Sustainable Agriculture operated by the Food and Agriculture Organization of the United Nations in close cooperation with the International Board for Plant Genetic Resources, the Consultative Group on International Agricultural Research and other relevant organizations;
- (b) The promotion of the Fourth International Technical Conference on the Conservation and Sustainable use of Plant Genetic Resources for Food and Sustainable Agriculture in 1994 to adopt the first State-of-the-World Report and the first Global Plan of Action on the Conservation and Sustainable Use of Plant Genetic Resources for Food and Sustainable Agriculture; and
- (c) The adjustment of the Global System for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Sustainable Agriculture in line with the outcome of the negotiations on a Convention on Biological Diversity,

Recalling the agreement in the Preparatory Committee for the United Nations Conference on Environment and Development on provisions regarding conservation and utilization of animal genetic resources for sustainable agriculture,

1. Confirms the great importance of the provisions of the Convention on Biological Diversity for the conservation and utilization of genetic resources for food and agriculture;
2. Urges that ways and means should be explored to develop complementarity and cooperation between the Convention on Biological Diversity and the Global System for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Sustainable Agriculture;
3. Recognizes the need for the provision of support to the implementation of all activities agreed upon in the programme area on conservation and sustainable utilization of plant genetic resources for food and sustainable agriculture and in the programme area on conservation and utilization of animal genetic resources for sustainable agriculture in the Agenda 21 proposed to be adopted at the United Nations Conference on Environment and Development in Rio de Janeiro;
4. Further recognizes the need to seek solutions to outstanding matters concerning plant genetic resources within the Global System for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Sustainable Agriculture, in particular:
  - (a) Access to ex-situ collections not acquired in accordance with this Convention; and
  - (b) The question of farmers' rights.

(Adopted on 22 May 1992)

Annex 2

Resolution 7/93 of the FAO Conference

REVISION OF THE INTERNATIONAL UNDERTAKING  
ON PLANT GENETIC RESOURCES

The Conference,

Noting that

- (a) the United Nations Conference on Environment and Development (UNCED), in Chapter 14 of its Programme of Action, Agenda 21, recommended that the Global System on the Conservation and Sustainable Use of Plant Genetic Resources for Food and Sustainable Agriculture be strengthened, and that the System should be adjusted to be in line with the outcome of the negotiations of a Convention on Biological Diversity,
- (b) the Convention on Biological Diversity, signed at UNCED by 156 governments and the European Communities, covers plant genetic resources, and recognizes that the authority to determine access to genetic resources rests with the national governments, that access to genetic resources shall be subject to the prior informed consent of the Contracting Party providing such resources, unless otherwise determined by that party, and shall be on mutually agreed terms,
- (c) the Final Act of the Nairobi Conference for the adoption of the agreed text of the Convention on Biological Diversity, in a resolution on the interrelationship between the Convention on Biological Diversity and the promotion of sustainable agriculture, urged that ways and means should be explored to develop complementarity and cooperation between the Convention on Biological Diversity and the Global System for the Conservation and Sustainable Use of Plant Genetic Resources for food and sustainable agriculture, and recognized the need to seek solutions to outstanding matters concerning plant genetic resources,
- (d) the Fourth Session of the FAO Commission on Plant Genetic Resources agreed that conditions of access to plant genetic resources needed further clarification,

Recognizing

- (a) the importance and urgency of revising the International Undertaking, in harmony with the Convention on Biological Diversity, on a step-by-step basis, starting with the integration of the Undertaking and its annexes,
- (b) the need to ensure fair and equitable sharing of benefits with the countries providing plant genetic resources,
- (c) the need to consider agreement on the terms of access to samples of plant genetic resources, including those preserved in ex situ collections, and not addressed by the Convention on Biological Diversity,
- (d) the need to realize Farmers' Rights,
- (e) the importance of close collaboration, including mutual reporting, in these matters, between the Commission on Plant Genetic Resources and the Governing Body of the Convention on Biological Diversity, the Intergovernmental Committee on the Convention on Biological Diversity, as well as the Commission on Sustainable Development;

/...

1. *Requests* the Director-General to provide a forum for negotiations among governments:
  - (a) for the adaptation of the International Undertaking on Plant Genetic Resources, in harmony with the Convention on Biological Diversity,
  - (b) for consideration of the issue of access on mutually agreed terms to plant genetic resources, including ex situ collections not addressed by the Convention, as well as
  - (c) for the issue of realization of Farmers' Rights;
2. *Urges* that the process be carried out through regular and extraordinary sessions of the Commission on Plant Genetic Resources, convened, if necessary, with extra-budgetary financing, and with the help of its subsidiary body, in close collaboration with the Intergovernmental Committee on the Convention on Biological Diversity, and after the entry into force of the Convention, with its Governing Body;
3. *Expresses* the hope that the process be concluded in time for the FAO International Technical Conference on Plant Genetic Resources; and
4. *Suggests* that the outcome be submitted to the International Technical Conference and to the Conference of the Parties to the Convention on Biological Diversity.

(Adopted on 22 November 1993)

Annex 3

THE STATE OF DEVELOPMENT OF THE  
INTERNATIONAL NETWORK OF *EX SITU* COLLECTIONS

1. Article 7.1 of the International Undertaking states that international arrangements will be developed and complemented in order that, *inter alia* "(a) there develops an internationally coordinated network of national, regional and international centres, including an international network of base collections in gene banks, under the auspices or jurisdiction of FAO, that have assumed the responsibility to hold, for the benefit of the international community and on the principle of unrestricted exchange, base or active collections of the plant genetic resources of particular plant species". Article 7.2 of the Undertaking further states that "Governments or institutions ... may, furthermore, notify the Director-General of FAO that they wish the base collection or collections for which they are responsible to be recognized as part of the international network of base collections in genebanks, under the auspices or the jurisdiction of FAO. The centre concerned will, whenever requested by FAO, make material in the base collection available to participants in the Undertaking, for purposes of scientific research, plant breeding or genetic resource conservation, free of charge, on the basis of mutual exchange, or on mutually agreed terms".

2. At its Second Session, the Commission considered possible legal arrangements to establish an international network of base collections in genebanks, in line with the International Undertaking on Plant Genetic Resources. Following a recommendation of the Commission, at its Second Session, the Director General approached governments, the International Agricultural Research Centres and other bodies, with a view to ascertaining their readiness to bring their base collection under the auspices or jurisdiction of FAO, and to indicate the arrangement they favoured.

3. At its Fourth Session, the Commission agreed on three model basic agreements which they considered might serve as a starting point for negotiations with governments and international institutions. The main points of these model agreements are that the government or institution places the "designated germplasm" of the collection in the International Network under the auspices or jurisdiction of FAO, and makes the germplasm available without restriction for the purposes of scientific research, plant breeding or conservation. Thirty-two countries have indicated their willingness to make their genebanks part of the International Network<sup>1</sup>.

4. FAO, the Consultative Group on International Agricultural Research and the Centres themselves are now actively seeking a solution to the issue of collections held by the International Agricultural Research Centres. Since 1990, the Centres have jointly stated that they do not regard themselves as owners of the germplasm (which has been collected as a result of international collaboration) but consider that they hold them in trust on behalf of the beneficiaries. The Consultative Group on International Agricultural Research identifies the beneficiaries variously as humanity, developing countries, their farming communities, and research workers.

5. Following an invitation from FAO, by Circular State Letter in 1988, the Centres in 1993 offered to place their base and active collections in the International Network of Germplasm Collections under the auspices of

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

FAO. At its Fifth Session, the Commission welcomed the offer made by the Consultative Group on International Agricultural Research Centres, although clarification of certain specific points was sought concerning "ownership" of the resources held in these collections, and the implication of the concept "trusteeship", as well as the policy role of the Commission. In the collections in the International Agricultural Research Centres, the Commission noted that the Centres had the obligation to conserve the material to the highest technical standards, to duplicate it for safety reasons, to make it available without restrictions, and to not seek any intellectual property right over it. The Commission then requested the Director-General of FAO "to negotiate and if satisfied to conclude agreements with the CGIAR centres, taking into account the concerns it had expressed and that the agreement reached would be reviewed by the Commission after four years". The report of the Commission was endorsed by the 27th Session of the Conference in November 1993.

6. A revised version of the agreement was then negotiated between FAO and the IARCs, and subsequently discussed and agreed in May 1994, by the Ninth Session of the intergovernmental Working Group of the Commission on Plant Genetic Resources. In early June 1994, the CGIAR, at its "mid-term" meeting in New Delhi, decided to postpone, for the moment, the signature of the proposed agreement.

7. In late June 1994, during the second session of the Intergovernmental Committee for a Convention on biological Diversity (ICCBD), many countries' representatives addressed the issue of the *ex situ* genetic resources for food and agriculture by the International Agricultural Research Centres (IARCs) of the Consultative Group on International Agricultural Research (CGIAR) system. "They strongly supported the efforts to bring these resources under the auspices of FAO. Delegates expressed strong support for finalizing the agreement between the FAO and the International Research Centres as soon as possible."<sup>2</sup> The representatives of FAO and the CGIAR confirmed that they intended to conclude the agreement within the next few months.

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

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2 UNEP/CBD/EC/2/L.3, para. 46.

Annex 4

DEVELOPMENT OF A GLOBAL PLAN OF ACTION FOR THE  
CONSERVATION AND SUSTAINABLE UTILIZATION OF  
PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Introduction and Background

1. This annex describes the aims and preparatory process of the Fourth International Technical Conference on the Conservation and Utilization of Plant Genetic Resources and the first Report on the State of the World's Plant Genetic Resources, and costed Global Plan of Action for their conservation and utilization. The process is being carried out through the "International Conference and Programme for Plant Genetic Resources" (ICPPGR) -- a multi-donor trust fund project established by FAO.

2. The development of this Report on the State of the World's Plant Genetic Resources and a Global Plan of Action, for consideration by the Fourth International Technical Conference, was recommended by the FAO Commission on Plant Genetic Resources to provide inter alia a sound and scientific basis for the implementation of Farmers' Rights through an international fund. It is, therefore, a key element in addressing Resolution 3 of the Nairobi Final Act. Resolution 3 specifically notes the convening of a Fourth International Technical Conference as well as the development of the Report on the State of the World's Plant Genetic Resources and Global Plan of Action, as recommendations which are included in UNCED's Agenda 21. The FAO Conference has noted that, together with the Revision of the International Undertaking on Plant Genetic Resources, the development of a Global Plan of Action will be a major component of FAO's contribution to and role in implementing the Convention on Biological Diversity.

The Aims and Strategy of the ICPPGR

3. As endorsed by the FAO Conference, the ICPPGR aims to develop consensus and commitment from countries, and from all relevant sectors, for the conservation of plant genetic resources for food and agriculture, and their use in sustainable development, and, in particular:

(i) to catalyze action at the country level to promote capacity building, including increased communication and access to information, improved planning and evaluation, the identification of problems and emergency needs, the formulation of projects to address such needs, and the encouragement of regional cooperation and initiatives;

(ii) to describe, through the Report on the State of the World's Plant Genetic Resources, the current situation of plant genetic resources, to identify gaps and needs and to propose priorities for action (see para 8); and

(iii) to secure agreement on a Global Plan of Action for plant genetic resources, as it emanates from the Report on the State of the World's Plant Genetic Resources, building upon the outline plan of action of Agenda 21, and for its financing, through an International Fund and other mechanisms, in line with FAO Conference Resolutions 5/89 and 3/91 (see para. 9).



Country-driven, participatory process.

4. In line with the decisions of the FAO Conference, the ICPPGR project will support a country-driven process for formulating a concrete Global Plan of Action. This participatory approach is important in developing an innovative, yet practical plan, to which all countries can feel fully committed. The ICPPGR is designed to result not only in countries endorsing a Global Plan of Action, but also in their committing themselves to its timely implementation, with support from both the scientific and political communities.

5. The project has been designed to offer a number of opportunities for country input, including:

(i) Preparation of Country Reports: In their Country Reports, countries will assess the status of their plant genetic resources, describe their activities for their conservation and utilization, and identify gaps, needs and priorities. The reports will be a major input to the Report on the State of the World's Plant Genetic Resources, and the first Global Plan of Action. The report will be complementary to the Biodiversity Country Studies, organized by UNEP. "Introductory Guidelines" on the scope of the reports, and on their preparation, were prepared by the ICPPGR Secretariat, and distributed under cover of the Circular State Letter of 30 September 1994 from the FAO Director-General. The involvement of all relevant ministries and government departments, as well as universities, research institutes, non-governmental organizations, the private sector, and farmers' organizations, is encouraged. The establishment of a permanent or ad hoc National Committee for Plant Genetic Resources is promoted, where this does not already exist. FAO, in cooperation with IPGRI's regional offices, will provide limited planning and technical assistance to countries in this work.

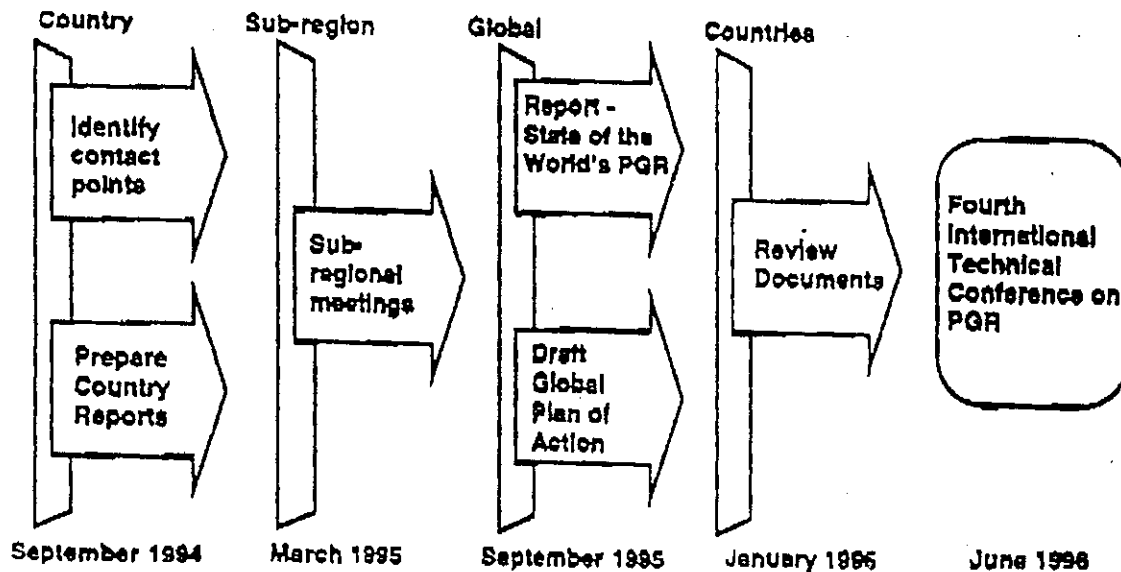
(ii) Sub-regional Meetings and the Preparation of Sub-regional Syntheses: The main conclusions arising from Country Reports will be discussed at sub-regional meetings, and will then be used in elaborating the Report on the State of the World's Plant Genetic Resources, and Global Plan of Action. In their presentations to sub-regional meetings, countries will be invited to focus on topics in which they have particular interest, experience or expertise, which might be of interest to the sub-region as a whole. Institutions and individual experts from the region will also be invited to present studies. In this way, a genuine exchange of expertise and experiences will be achieved. Synthesis reports will then be developed, drawing on the assessments contained in the Country Reports, and the discussions at, and conclusions of, the sub-regional meetings, as well as on other cross-cutting studies commissioned by, or made available to, the project. Sub-regions have been defined on the basis of common agro-ecological conditions taking into account common political and economic groupings. Most encompass one of the classical Centres of Diversity identified by the Russian scientist, N.I. Vavilov. Depending on the availability of funding, meetings will be organized for each sub-region.

(iii) The intergovernmental FAO Commission on Plant Genetic Resources will provide policy guidance to the process, and review a draft Global Plan of Action.

6. As part of the consensus-building approach, FAO will invite the participation of all relevant organizations and institutions dealing with ex situ and in situ conservation, as well as with the sustainable utilization of plant genetic resources, especially the Consultative Group on International Agricultural Research (CGIAR) and its International Agricultural Research Centres (particularly IPGRI), UNEP, the governing body of the Convention on Biological Diversity, and relevant non-governmental organizations. In relation to the costing of the Global

Plan of Action and its component projects, cooperation will be sought from the World Bank, other multilateral funding agencies, and from the GEF. Furthermore, through the creation of a wide-ranging participatory process, the FAO/ICPPGR Secretariat will play an important role as a catalyst and facilitator, in encouraging the involvement of others.

7. The following chart summarizes the main steps of the process, with a timetable for its implementation as currently envisaged by the FAO/ICPPGR Secretariat. It must be stressed that this time-frame is critically dependent upon the country-driven process, and on countries meeting the various deadlines.



The main outputs of the process.

8. The Report on the State of the World's Plant Genetic Resources will describe the current situation of plant genetic resources, at the global level, and identify the needs for the conservation and sustainable utilization, as well as emergency situations. In particular, the Report will:

- (i) assess the present state of genetic diversity, the degree of genetic erosion, and the current coverage and status of the in-situ and ex situ conservation and utilization of plant genetic resources for food and agriculture. The Report will build upon assessments by country and by sub-region, and, to the extent feasible, by crop group;
- (ii) identify major constraints to plant genetic resources conservation, utilization and exchange;
- (iii) evaluate the extent to which collections are used and developed, and identify problems which hinder their full utilization for plant breeding;
- (iv) assess national and regional capabilities for the conservation and utilization of plant genetic resources for food and agriculture, in terms of human resources, institutional structures, and the methodologies employed;
- (v) examine areas of special interest to the conservation and utilization of plant genetic resources for food and agriculture, such as informatics,

new biotechnologies, local technologies, and issues such as on-farm conservation, and the need for new approaches to plant breeding which maintain diversity in production systems; and

(vi) identify technologies appropriate for meeting the special needs of the developing countries, and assess the current state and pattern of technology transfer in plant genetic resources.

9. The scope of the Report on the State of the World's Plant Genetic Resources encompasses plants of social and economic interest, especially for agriculture and forestry. The report will concentrate on domesticated crop species and their wild relatives, forest species of current or potential economic value, and promising species of plants which could be developed into new crops. It will give balanced attention to new, as well as to traditional and indigenous technologies. A static "inventory" approach will be avoided, by emphasizing existing problems and emergencies at national, regional and global levels. The report will serve as a bench-mark of the current situation, and form the basis on which the Global Plan of Action will be developed.

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

(i) propose policies and strategies for the conservation and utilization of plant genetic resources for food and agriculture at the national, regional and global levels, with particular attention to the linkages between conservation programmes, and utilization capabilities and programmes;

(ii) assist countries in elaborating plans or programmes of priority action for conservation activities at the national level;

(iii) assist countries in strengthening national capabilities for utilizing plant genetic resources, and their national plant breeding and seed production capacities;

(iv) propose appropriate and feasible measures to make the Global System for Plant Genetic Resources more effective; and

(v) include costed programmes, projects and activities, to be financed by an International Fund and other mechanisms.

Annex 5

Notes on Domestic Animal Genetic Resources

1. The first analysis of the Global Databank on Animal Genetic Resources which is being developed by FAO, was recently released in the First Edition of the World Watch List for Domestic Animal Diversity, published by FAO and UNEP. This analysis highlighted the serious state of a large proportion of the genetic resources of the 40 or so species of animals widely used for food and agriculture. Based on the global survey data in the Databank, above 30% or 1,200 of the expected total of 4,000 breeds are now at very high risk of extinction.
2. In domestic animals *ex situ* conservation will primarily rely on cryopreservation of semen and, where technology exists, of embryos and particularly of oocytes. Until now *ex situ* conservation by cryopreservation has not been widely used in these animals. FAO information indicates that adequate *ex situ* samples are currently being maintained for as few as 100 of the predicted 1,200 breeds currently categorised as being at high risk of extinction. However this must change and cryopreservation must be employed more widely in the maintenance of global animal genetic resources and the conservation of this segment of biodiversity. *Ex situ* conservation forms one of the six primary elements in FAO's new and comprehensive programme for the global management of animal genetic resources and conservation of domestic animal diversity. This programme also incorporates the wild relatives for these species.
3. A preferred global strategy for *ex situ* conservation of domestic animals, which is in keeping with the Convention on Biological Diversity, combines national genebanking with global repositories of last resort as a safety net.
4. Access and ownership issues associated with *ex situ* conservation of animal genetic resources are still to be elaborated.

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