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l'alimentation  
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l'agriculture

Organización  
de las  
Naciones  
Unidas  
para la  
Agricultura  
y la  
Alimentación

### Item 4.4(a) of the Draft Provisional Agenda

## COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Ninth Regular Session

Rome, 14 – 18 October 2002

### REPORT ON THE INTERNATIONAL NETWORK OF *EX SITU* COLLECTIONS UNDER THE AUSPICES OF FAO

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## REPORT ON THE INTERNATIONAL NETWORK OF *EX SITU* COLLECTIONS UNDER THE AUSPICES OF FAO

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### I. BACKGROUND

#### *Establishment of the International Network*

1. The Commission called for the development of the International Network in 1989, in line with Article 7.1a of the International Undertaking, because of the uncertainty of the legal situation of *ex situ* germplasm in genebanks, and of the lack of appropriate agreements to ensure its safe conservation. Since the provisions regarding access to genetic resources in the Convention on Biological Diversity (CBD) do not apply to *ex situ* collections assembled prior to its entry into force, Resolution 3 of the Nairobi Conference for the Adoption of the Agreed Text of the CBD (May 1992) recognized the need to resolve this issue within the context of the FAO Global System.

#### *Agreements with the CGIAR Centres*

2. Twelve Centres of the Consultative Group on International Agricultural Research (CGIAR)<sup>1</sup> signed agreements with FAO on 26 October 1994, placing some 500,000 accessions in the International Network, whereby they agree, in particular, to hold designated germplasm “*in trust for the benefit of the international community*”, and not to claim legal ownership or seek intellectual property rights over the designated germplasm and related information (Art. 3 of the agreements). They also undertake that, “*where samples of the designated germplasm and/or related information are transferred to any other person or institution, the Centre shall ensure that such other person or institution, and any further entity receiving samples of the designated germplasm...,*” are bound by the same conditions (Art. 10 of the agreements).

3. The agreements were originally concluded for a period of four years and were to “*be automatically renewed for further periods of four years unless notice of non-renewal is given in writing by either party not less than one hundred and eighty (180) days before the end of any four-year period*” (Art. 11 of the agreements). The agreements may be amended at any time by mutual agreement of the parties. They may be terminated at any time by either party by giving notice one year in advance of the termination date.

#### *Interest of countries in joining the International Network*

4. The Sixth Regular Session of the Commission (June 1995) considered and revised the model agreements for adherence to the International Network, in order to harmonize them with the provisions of the CBD, and agreed that negotiations with the 32 countries that had expressed their willingness to join the International Network should continue, using the revised agreements as appropriate. It noted, however, that the final form of such agreements would depend upon the outcome of the negotiations for the revision of the International Undertaking.

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<sup>1</sup> The Centres are: Centro Internacional de Agricultura Tropical (CIAT); Centro Internacional de Mejoramiento de Maíz y Trigo (CIMMYT); Centro Internacional de la Papa (CIP); International Center for Agricultural Research in the Dry Areas (ICARDA); International Center for Research in Agroforestry (ICRAF); International Crops Research Institute for the Semi-Arid Tropics (ICRISAT); International Institute for Tropical Agriculture (IITA); International Livestock Centre for Africa (ILCA); International Plant Genetic Resources Institute (IPGRI)/International Network for the Improvement of Banana and Plantain (INIBAP); International Rice Research Institute (IRRI); West Africa Rice Development Association (WARDA); Centre for International Forestry Research (CIFOR).

5. During the preparatory process of the Leipzig International Technical Conference on Plant Genetic Resources (June 1996), several additional countries expressed interest in joining the International Network. A number of relevant recommendations were made in the inter-governmental sub-regional meetings, particularly that institutions which had, prior to the entry into force of the Convention, made commitments for the availability and long-term conservation of their collections, within the former International Board for Plant Genetic Resources (IBPGR) Register of Base Collections, should now place those collections in the International Network. These collections from all over the world, many of which were made with IBPGR support, account - together with those of the CGIAR - for about a quarter of the world's collections of plant genetic resources for food and agriculture (and undoubtedly a much higher proportion of the world's unique accessions).

6. Consultations with these countries and institutions and with other national or international germplasm banks, with a view to their collections becoming part of the International Network, were on hold during negotiations for the revision of the International Undertaking.

#### ***First renewal of the agreements with the CGIAR Centres***

7. The Seventh Regular Session of the Commission (May 1997), considering that the 1994 agreements with the twelve CGIAR Centres would come up for renewal in October 1998, “*recommended that the existing agreements between FAO and the twelve International Agricultural Research Centres of the CGIAR be extended, pending the revision of the International Undertaking*”.<sup>2</sup> Those agreements were then renewed for a period of four years, until 26 October 2002.

#### ***COGENT Agreements***

8. Since the Seventh Regular Session of the Commission (May 1997), consultations continued between FAO and the International Plant Genetic Resources Institute (IPGRI), on behalf of the International Coconut Genetic Resources Network (COGENT), regarding the placing of coconut genetic resource collections, held by the host countries on behalf of their respective regions and forming part of the COGENT, into the International Network under the auspices of FAO to reflect the wishes of the member countries of COGENT. Such consultations led to the conclusion of a tripartite agreement (between the Government of India as holder of the International Coconut Genebank for South Asia, IPGRI acting on behalf of the COGENT, and FAO) on 30 October 1998. The agreement follows very closely the format of previous agreements with the CGIAR Centres, duly taking into account the recommendations of the Sixth Regular Session of the Commission.

9. Subsequently, on 30 November 1998, another COGENT regional centre joined the International Network through a similar tripartite agreement (Agreement between the Government of Papua New Guinea, as holder of the International Coconut Genebank for the South Pacific, IPGRI acting on behalf of the COGENT, and FAO).

10. The Commission, at its Eighth Regular Session (April 1999), “*expressed satisfaction with the placing of the coconut genetic resources of the International Coconut Genetic Resources Network (COGENT) in the International Network of Ex Situ Collections under the Auspices of FAO*”.<sup>3</sup>

#### ***Material Transfer Agreements (MTAs)***

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<sup>2</sup> *Report of the Seventh Regular Session of the Commission on Genetic Resources for Food and Agriculture*, Rome, 15-23 May 1997, paragraph 26.

<sup>3</sup> *Report of the Eighth Regular Session of the Commission on Genetic Resources for Food and Agriculture*, Rome, 19-20 April 1999, paragraph 21.

11. In transferring germplasm designated under the agreements with FAO, the CGIAR Centres and the COGENT genebanks use a standard Material Transfer Agreement (MTA), the text of which was agreed with FAO. The MTAs require that recipients not claim ownership or intellectual property rights over the designated germplasm and related information, and that they bind subsequent recipients to the same conditions.

12. In October 1998, the CGIAR Centres and FAO issued a Second Joint Statement of FAO and the CGIAR Centres.<sup>4</sup> In the Second Joint Statement, the CGIAR Centres and FAO commit themselves to taking appropriate remedial action, in accordance with agreed procedures, in case of suspected violations of the MTAs, and agree on a common understanding concerning certain provisions of the agreements, in particular regarding (i) the size and number of samples to be made available, (ii) the health and quarantine standards to be followed, (iii) the addition of new materials to the list of designated germplasm, and (iv) the updating and revision of that list.

## **II. PROGRESS SINCE THE EIGHTH REGULAR SESSION (APRIL 1999) AND MATTERS FOR CONSIDERATION**

### ***Second renewal of the agreements with the CGIAR Centres***

13. The agreements were automatically renewed in 1998 until 26 October 2002. The deadline for the giving of notice of non-renewal is, in accordance with Art. 11 of the agreements, “*one hundred and eighty (180) days before the end of any four-year period*”, namely 26 April 2002. The agreements will thus be automatically renewed on 26 October 2002 for a further period of four years, namely until 26 October 2006. It is to be noted, however, that the agreements may be amended at any time by mutual agreement of the Parties and may be terminated at any time by either Party by giving notice one year in advance of the termination date.

### ***Revision of the current Material Transfer Agreements (MTAs) to be considered by the Ninth Regular Session of the Commission***

14. The Commission, at its Sixth Extraordinary Session (June 2001) adopted a Resolution, “*Cognisant of the fact that the current agreements between the International Agricultural Research Centres and FAO, placing collections of plant germplasm under the auspices of FAO, will be subject to renewal in 2002*”, and requesting “*the Director-General of FAO and the Directors General of those International Agricultural Research Centres which have signed agreements with FAO to collaborate in the preparation of a revised Material Transfer Agreement that will, as appropriate, take into account the provisions of the revised Undertaking and support an effective transition*”, and that “*the draft Material Transfer Agreement be presented to the Ninth Regular Session of the Commission on Genetic Resources for Food and Agriculture, for its consideration*”.<sup>5</sup> This issue is dealt with in Document CGRFA-9/02/20.

### ***Activities to be carried out by the Commission acting as the Interim Committee for the International Treaty on Plant Genetic Resources for Food and Agriculture***

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<sup>4</sup> The first *Joint Statement of FAO and the CGIAR Centres on the Agreement Placing CGIAR Germplasm Collections under the Auspices of FAO* was made available to the Commission, at its First Extraordinary Session (November 1994), in document CPGR-Ex1/94/Inf.5/Add.1.

<sup>5</sup> *Report of the Thirty-first Session of the Conference of FAO*, Rome, 2-13 November 2001, paragraph 58, operative paragraph 8e of Resolution 3/2001.

15. The FAO Conference, at its Thirty-first Session (November 2001) adopted Resolution 3/2001: “*Adoption of the International Treaty on Plant Genetic Resources for Food and Agriculture and Interim Arrangements for its Implementation*”.<sup>6</sup> As part of these interim arrangements, the Conference requested the Commission acting as the Interim Committee for the Treaty to:

- Prepare new draft agreements to be signed by the Governing Body with the CGIAR Centres and other relevant international institutions;
- Prepare a new draft standard Material Transfer Agreement (MTA).

16. As regards the preparation of new draft agreements to be signed by the Governing Body with the CGIAR Centres and other relevant international institutions, the Conference requested the Commission acting as the Interim Committee for the Treaty to “*consult with the International Agricultural Research Centres and other relevant international institutions on the agreements to be signed with the Governing Body, in accordance with Article 15 of the International Treaty on Plant Genetic Resources for Food and Agriculture, and prepare draft agreements for the consideration of the Governing Body at its first session*”.<sup>7</sup> This issue will be discussed by the Interim Committee for the Treaty and is dealt with in Document CGRFA/MIC-1/02/8.

17. As regards the preparation of a new draft standard Material Transfer Agreement (MTA), the Conference requested the Commission acting as the Interim Committee for the Treaty to “*prepare, for consideration at the first Session of the Governing Body, taking into account, as appropriate, the recommendations of the Expert Group to be established pursuant to this Resolution, a draft standard Material Transfer Agreement (MTA) provided for in Article 12.4 for facilitated access, which shall include, inter alia, recommended terms for commercial benefit-sharing under Article 13.2d(ii) of the Treaty*”.<sup>8</sup> The Conference established the Expert Group “*to develop and propose recommendations, which may be considered by the Interim Committee, on the terms of the standard MTA. Such Group shall be composed of experts with technical or legal expertise with respect to the exchange of plant genetic resources for food and agriculture and relevant commercial practice. Terms of Reference for the Expert Group shall be agreed at the first meeting of the Interim Committee*”.<sup>9</sup> The terms of reference for the Expert Group, to be discussed by the Interim Committee for the Treaty, are the object of Document CGRFA/MIC-1/02/6.

### ***Operation of the CGIAR’s Genebanks***

18. The collections maintained by the Centres are well managed and for the large part meet international standards, although in a few cases it has still not been possible to secure the necessary funding required to fully achieve this status. The costs of maintaining the collections and distributing materials internationally are largely borne by core funding that, for all Centres, has fallen by 50% since 1994. The Centres, together with FAO and other partners, are currently exploring the creation of an endowment fund, the proceeds of which would contribute to the long-term maintenance of key national and international germplasm collections around the world, including those maintained by the Centres themselves.

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<sup>6</sup> *Report of the Thirty-first Session of the Conference of FAO*, Rome, 2-13 November 2001, paragraph 58.

<sup>7</sup> *Report of the Thirty-first Session of the Conference of FAO*, Rome, 2-13 November 2001, paragraph 58, operative paragraph 8e of Resolution 3/2001.

<sup>8</sup> *Report of the Thirty-first Session of the Conference of FAO*, Rome, 2-13 November 2001, paragraph 58, operative paragraph 8c of Resolution 3/2001.

<sup>9</sup> *Report of the Thirty-first Session of the Conference of FAO*, Rome, 2-13 November 2001, paragraph 58, operative paragraph 9 of Resolution 3/2001.

19. The CGIAR Centres have regularly updated the list of designated germplasm, in accordance with Art. 2 of the agreements with FAO which establishes that the list of designated germplasm will be updated every two years. A summary listing of germplasm designated in trust under the agreements is attached to this document as Annex I.

***COGENT Agreements: The International Coconut Genebank (ICG)***

20. Since April 1999, two additional COGENT regional centres have joined the International Network through the following agreements:

- 26 May 1999: Agreement between the Government of Indonesia, as holder of the International Coconut Genebank for Southeast Asia, IPGRI acting on behalf of the COGENT, and FAO;
- 14 October 1999: Agreement between the Government of Côte d'Ivoire, as holder of the International Coconut Genebank for Africa/Indian Ocean, IPGRI acting on behalf of the COGENT, and FAO.

21. The International Coconut Genetic Resources Network (COGENT) is at present a network of 38 coconut-producing countries, being administered by the International Plant Genetic Resources Institute (IPGRI), and has developed into a multi-site International Coconut Genebank (ICG) hosted by India for South Asia, Indonesia for Southeast Asia, Papua New Guinea for the South Pacific and Côte d'Ivoire for Africa and the Indian Ocean. Each host country will conserve and evaluate 200 of the most important accessions of the region and provide access to the conserved germplasm and promote safe movement to coconut breeders worldwide. The ICG is a full participant in the International Network of *Ex Situ* Collections under the Auspices of FAO, through the agreements signed separately by the host countries with IPGRI, acting on behalf of COGENT, and with FAO (see paragraphs 8, 9 and 20 of this document).

22. A meeting of the ICG stakeholders will be held in Kasaragod, India, on 29-31 October 2002 to update the list of designated germplasm, standardize protocols for evaluation and safe movement and develop strategies for capacity-building and ICG work plans and budget for the next seven years. The present status of the ICG is summarized in Annex II to this document.

***Intellectual Property Rights***

23. Since April 1999, the implementation of the CGIAR Centres' agreements and MTAs did not give rise to any special problems. The CGIAR Centres and FAO had to intervene only in one case, specifically as regards intellectual property rights (plant variety protection or patent protection) being sought by third parties over designated germplasm provided by the CGIAR Centres. The existence of the agreements allowed the CGIAR Centres and FAO to take immediate action to investigate and attempt to resolve the problems.

24. In early 2000, the Director General of CIAT informed FAO that the United States Patent Office had granted intellectual property rights related to the "Enola" bean to a US private company.<sup>10</sup> In March 2000 the Director General of CIAT wrote a letter to the US private company indicating that the "Enola" bean is substantially identical in all important respects to a number of accessions held by CIAT in its genebank and designated since 1994 under the terms of the agreement with FAO, and that CIAT will continue to distribute freely such germplasm

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<sup>10</sup> The intellectual property rights were granted under US Patent Number 5,894,079 covering any *Phaseolus vulgaris* variety having a certain yellow seed colour; and under US Plant Variety Protection Certificate Number 9,700,027 for the bean variety itself.

accessions in the framework of such agreement.<sup>11</sup> CIAT did not obtain a reply to this letter. In May 2000, the FAO Legal Office sent a letter to the Director General of CIAT supporting the latter's intention to bring the matter to the attention of the United States Patent Office and proposing to CIAT to include the letter of the Legal Office, in which the official position of FAO was contained, in the documentation to be sent to the United States Patent Office.

25. The CIAT challenged the patent on 20 December 2000, by asking for a re-examination. The reasons for CIAT challenging the patent were that (i) the use of "*bean designated germplasm*" with seed of yellow colour might be restricted by this patent for agronomy and other breeding purposes in the USA, and (ii) that two basic requisites (namely, newness, and non-obviousness) for granting a patent were not fulfilled.<sup>12</sup> On 8 February 2001, the United States Patent Office indicated that it would re-examine the patent.<sup>13</sup>

26. Over the past two years, several bean producers in the USA, namely in the western states, while growing other types of yellow beans, have been challenged in the court by the patent owner, under the assumption that they were growing "*Enola*" without permission. The patent owner has switched attorney twice since the re-examination process has been initiated, thus delaying de facto the proceedings.

### ***Report on introgression of transgenic materials***

27. In early 2002, FAO had closely followed reports of the possible introgression of transgenic material into maize landraces in Mexico and had noted various statements regarding the possibility that such transgenic material had entered the collections of CIMMYT and, more particularly, the accessions that CIMMYT had designated pursuant to its agreement with FAO. FAO wrote to the Director General of CIMMYT to ascertain the situation. In particular, FAO asked information on the following issues: (i) if CIMMYT had been able to ascertain whether transgenic DNA has been identified in the Mexican landraces designated under the agreement; (ii) if this did not appear to be the case, what CIMMYT's opinion was as to whether it was likely to occur, and, if such introgression was likely to occur, the extent and the rate at which this was likely to happen; and (iii) any information CIMMYT might be able to provide on the possible consequences that the introgression of transgenic DNA could have for the genetic diversity and integrity of designated germplasm, and for CIMMYT's agreement with FAO.

28. The Director General of CIMMYT took action forthwith. In his reply, the following issues which could be of interest to the Commission were addressed. In relation to the specific concerns regarding the possibility that transgenic material has entered the collections of CIMMYT, and, more particularly, the accessions that CIMMYT has designated pursuant to its

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<sup>11</sup> The CIAT had, by 1996, designated 28,393 accessions of *Phaseolus* beans under the CIAT-FAO agreement. About 6,000 bean accessions were from Mexico, out of which 260 were with yellow seeds under vernacular names such as "Canario", "Amarillo", "Azufrado" and "Garbancillo". Six bean accessions with yellow seed and *hilum* designated under the CIAT-FAO agreement match the description of "*Enola*" as provided in the patent.

<sup>12</sup> According to the information received from CIAT, the yellow colour in seeds of common bean is not an invention: it exists in the Americas since pre-Columbian times. There is documented prior art about the existence of sulphur yellow beans: Irish (1901), Bukasov (1930), Gepts (1988), Hernández (1973), Hernández et al. (1991), Kaplan (1980), Kaplan & Lynch (1999), Lépiz & Sandoval (1983), Voysest (1983), Voysest & Dessert (1991). These works are not mentioned in the patent. The breeding process is not fully described, and the incomplete description provided is not a novelty. There is documented prior art about breeding processes: Beaver & Kelly (1994), Buishand (1956), Fermond (1855), Fouilloux (1978), Fouilloux & Bannerot (1988), Singh (1991). These works are not mentioned in the patent.

<sup>13</sup> On 11 July 2001 the patent owner asked to cancel claims 1-15 and added claims 16-58. CIAT made pertinent searches on these new claims and ascertained that these claims continue to ignore all above cited prior art, and do not fulfil the basic requisites for patents, according to United States law.

agreement with FAO, there is, to date, no evidence of this having occurred. CIMMYT has now tested more than 150 Mexican landraces and has failed to find the presence of the cauliflower mosaic virus promoter (CaMV 35s) that is associated with many of the commercial maize transgenes. CIMMYT is continuing to test materials as time and resources permit (no additional resources have been provided to CIMMYT for this purpose). In summary, the various statements regarding the possibility that such transgenic material has entered the collections of CIMMYT and, more particularly, the accessions that CIMMYT has designated pursuant to its agreement with FAO, are not based on reliable facts.

29. According to CIMMYT, one of the issues regarding testing procedures which might be drawn to the attention of the FAO Commission relates to the definitions of “transgenic” or “non-transgenic”. Most laws for transgenic testing require frequencies of transgenes greater than 1% to be reported. To detect transgenes in a heterogeneous population at a frequency of less than 1% requires the testing of 5000 individuals or more to be sure of the result. The cost for such an extensive analysis would be significant and the number of seeds required would exhaust many accessions. Therefore any testing procedures considered would need to take into account threshold levels and the related costs and benefits.

30. In addition to testing of CIMMYT genebank accessions, CIMMYT has put into place procedures which will minimize the chances of any introduction of transgenic (i.e., introgressed) material into CIMMYT collections. These are:

- Pre-testing for the presence of transgenes in new accessions, before introducing them to the gene bank as designated or non-designated materials;
- Planting of a five-meter wide buffer of non-GM maize around germplasm regeneration blocks, to trap any pollen from other materials;
- Regenerating gene bank accessions using strict hand-pollination procedures;
- Not planting known genetically modified maize materials at CIMMYT experimental sites, where genebank materials are regenerated (currently CIMMYT has no genetically modified materials in the field in Mexico, or elsewhere).

31. FAO thanked CIMMYT for the comprehensive information received and took notice of the fact that any further in-depth research would be too expensive. CIMMYT may address in the future the other questions raised by FAO, which were more on technical and scientific matters, as CIMMYT is a centre of scientific excellence on maize.

### **III. POSSIBLE ACTION BY THE COMMISSION**

32. The Commission may make recommendations to improve the implementation of the agreements and, in such context, the operation of the genebanks.

## ANNEX 1

## Germplasm designated in trust under CGIAR/FAO Agreements (2002)

Centre	Crop	Number of Accessions
<b>CIAT</b>	Cassava	5,728
	Forages	18,138
	Bean	31,718
<b>CIMMYT</b>	Maize	20,411
	Wheat	95,113
<b>CIP</b>	Andean roots and tubers	1,112
	Sweet potato	6,413
	Potato	5,057
<b>ICARDA</b>	Barley	24,218
	Chickpea	9,116
	Faba bean	9,074
	Wheat	30,270
	Forages	24,581
	Lentil	7,827
<b>ICRAF</b>	<i>Sesbania</i>	25
<b>ICRISAT</b>	Chickpea	16,961
	Groundnut	14,357
	Pearl millet	21,250
	Pigeon pea	12,698
	Sorghum	35,780
	Minor millets	9,050
<b>IITA</b>	Bambara groundnut	2,029
	Cassava	2,158
	Cowpea	15,001
	Soybean	1,909
	Wild <i>Vigna</i>	1,634
	Yam	2,878
<b>ILRI</b>	Forages	11,537
<b>IPGRI/INIBAP</b>	<i>Musa</i>	931
<b>IRRI</b>	Rice	80,617
<b>WARDA</b>	Rice	14,917
<b>Total</b>		<b>532,508</b>

## ANNEX 2

## International Coconut Genebank (2002)

<i>Name of Genebank</i>	<b>Date of signature of Agreement</b>	<b>Initial number in list of designated germplasm</b>	<b>Designated germplasm currently conserved</b>
1. International Coconut Genebank for the South Pacific (Papua New Guinea)	30 November 1998	55	52
2. International Coconut Genebank for Southeast Asia (Indonesia)	26 May 1999	52	29
3. International Coconut Genebank for Africa and The Indian Ocean (Côte d'Ivoire)	14 October 1999	49	91
4. International Coconut Genebank for South Asia (India)	30 October 1998	49	42