



منظمة الأغذية
والزراعة
للأمم المتحدة

联合国
粮食及
农业组织

Food
and
Agriculture
Organization
of
the
United
Nations

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

Organización
de las
Naciones
Unidas
para la
Agricultura
y la
Alimentación

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REPORTS FROM INTERNATIONAL ORGANIZATIONS ON THEIR POLICIES, PROGRAMMES AND ACTIVITIES ON AGRICULTURAL BIOLOGICAL DIVERSITY

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the languages in which they were received only.

CONTENTS

	<i>Page</i>
1. CAB International Bioscience Division (Centres for Agriculture & Biosciences International)	1
2. Center for Research and Higher Education in Tropical Agriculture (CATIE)	1
3. Common Fund for Commodities (CFC)	3

**REPORTS FROM INTERNATIONAL ORGANIZATIONS
ON THEIR POLICIES, PROGRAMMES AND ACTIVITIES
ON AGRICULTURAL BIOLOGICAL DIVERSITY**

**1. CAB INTERNATIONAL BIOSCIENCE DIVISION
(CENTRES FOR AGRICULTURE & BIOSCIENCES INTERNATIONAL)**

1. The Microbial Genetic Resource Collection (housing 400,000 dried and 21,000 living specimens of fungi, bacteria and nematodes) has been active in major international initiatives and proactive in policy development as a member of the OECD Task Force on Biological Resource Centres, the UK Government stakeholder groups addressing the Convention on Biological Diversity and through the Secretariat of the UK National Culture Collection. CABI is currently advising on policy for culture collections in Portugal and Uzbekistan, contributes to an EU funded European Biological Resource Centre Network and operates the UKNCC Quality Management System and the Common Access to Biological Resource Information (CABRI) system.
2. Access to the microbial collection is now possible through e-commerce - Scientific World and funding has been secured from the UK Ministry of Agriculture, Fisheries and Food for the development of cryopreservation protocols for recalcitrant organisms (2000-2001).
3. CABI is currently undertaking research and development projects to assess the impact of agricultural intensification on biodiversity, functional agrobiodiversity in rice systems, and the characterisation and utilisation of biodiversity in tropical forests of Guyana.

**2. CENTER FOR RESEARCH AND HIGHER EDUCATION
IN TROPICAL AGRICULTURE (CATIE)**

<p>In transmitting the following report for the consideration of the Commission, Mr. Markku Kanninen Assistant Director General of CATIE, expressed CATIE's interest in "linking their plant genetic resources collections (of species mentioned in Annex 1 to the Treaty) to the International Treaty on Plant Genetic Resources for Food and Agriculture".</p>

4. For more than 50 years, CATIE and IICA have been actively working in the collection and conservation of crop and tree species. The CATIE collections in Turrialba, Costa Rica, were established in 1942 with the founding of the IICA at this site. Early priorities were coffee, rubber, and cocoa, followed later by, among others, beans, maize, tropical fruits, palms and forest species. In 1976, a formal PGR Unit was established with the support of the German Government through GTZ and technical and financial support through IPGRI, US\$A, FAO, ACRI, DANIDA, CIRAD and IRD, among others. Since then, seed banks were created and the field collections were strengthened. At present, CATIE's collections are among the most important in Central America. For some species, particularly *Theobroma cacao*, *Coffea arabica*, *Capsicum*, *Cucurbita*, and *Lycopersicon esculentum*, CATIE's collections are of worldwide importance.
5. Orthodox seeds are conserved in long-term (-17 °C) and short-term (5 °C) chambers. About 30,000 accessions from 100 species are preserved, including from *Zea mays* and the genera *Capsicum*, *Cucurbita*, *Lycopersicon*, *Phaseolus* (a copy of the CIAT world collection),

Amaranthus, *Pachyrhizus*, *Physalis* and *Solanum*. *In vitro* collections include *Manihot esculenta*, *Ipomoea batatas*, *Colocasia*, *Vanilla planifolia*, *Coffea*. and *Musa*. The last one, composed of 105 accessions, is a duplicate of the International *Musa spp.* collection, deposited at CATIE by IPGRI-INIBAP. The field collections and botanical garden, in 2002 covering 46 ha, consist of 5400 accessions from more than 300 species, including collections of coffee (*Coffea arabica*), cacao (*Theobroma cacao*), peach palm (*Bactris gasipaes*), macadamia (*Macadamia integrifolia*), Mesoamerican tropical fruits (*Pouteria sapota*, *Annona muricata*, *Chrysopyllium cainito*, *Psidium guajaba*, etc), and roots and tubers (*Manihot esculenta*, *Ipomoea batatas*, *Dioscorea spp.*).

Table 1. Inventory of annual and perennial species preserved at CATIE PGR Unit (2001)

ANNUALS	ACCESSIONS	PERENNIALS	ACCESSIONS
Grains	692	Fruit	1.007
<i>Amarantos / Amaranthus spp</i>	267	<i>Anona / Annona spp.</i>	37
<i>Crotalarias / Crotalaria spp.</i>	25	<i>Pejibaye / Bactris gasipaes</i>	537
<i>Maíz / Zea mays</i>	400	<i>Nance / Byrsonima crassifolii</i>	23
		<i>Cítricos / Citrus spp.</i>	20
Legumes	24.822	<i>Lichi / Litchi chinensis</i>	10
<i>Frijol espada / Canavalia ensiformis</i>	16	<i>Zapote / Pouteria, Manilkara</i>	313
<i>Frijol / Phaseolus spp.*</i>	24578	<i>Guayaba, cas / Psidium spp.</i>	67
<i>Caupí / Vigna unguiculata</i>	175		
<i>Frijol alado / Psophocarpus spp.</i>	19	Plantation crops	2685
<i>Lablab / Dolichos lablab</i>	34	<i>Café / Coffea spp</i>	1768
		<i>Cacao / Theobroma cacao</i>	707
Vegetables	4.202	<i>Achiote / Bixa orellana</i>	130
<i>Tomate / Lycopersicon spp.</i>	457	<i>Macadamia / Macadamia spp.</i>	24
<i>Chile / Capsicum spp.</i>	1284	<i>Plátano / Musa spp.</i>	56
<i>Ayote / Cucurbita spp.</i>	2138		
<i>Calabaza / Lagenaria siceraria</i>	145	Forest spp.	300
<i>Tomate cáscara / Physalis spp.</i>	84	80 species	300
<i>Naranjilla / Solanum quitoense</i>	94		
		Botanical gardens	433
Roots & tubers	550	<i>"Cabiria 1" (101 species)</i>	163
<i>Jicama / Pachyrhizus spp.</i>	163	<i>"Cabiria 7" (188 species)</i>	270
<i>Camote / Ipomoea batatas</i>	145		
<i>Yuca / Manihot esculenta</i>	169		
<i>Ñame / Dioscorea spp.</i>	73		
Misc.	162	Misc.	203
TOTAL	35.056		

* Includes the CIAT international collection of *Phaseolus* accessions (23400 accessions) as a duplicate (black box storage).

6. The principal objectives of the collections are to:

- (1) conserve native species from Meso-America, particularly species threatened by genetic erosion, and economically important species from other regions of the world;
- (2) identify economically important traits such as resistance to biotic and abiotic stress, quality and yield for plant breeding programs, and
- (3) promote the use of non-traditional species or varieties as new sources of food or other uses; and
- (4) support mechanisms for the exchange and reproduction of promising plant materials for the rural poor.

7. In the past, access to plant genetic resources was largely characterized by free exchange, based on the principle that 'germplasm is a common heritage of mankind'. However, this

principle is now subject to the “Convention on Biological Diversity” (CBD) which recognizes national sovereignty over genetic resources. CATIE policy shares the following objectives of the CBD and the International Treaty on PGR for Food and Agriculture: the conservation of biodiversity, its sustainable use, and the equitable sharing of the benefits arising from its use. The CATIE collections are at the disposition of many users, particularly from CATIE member countries, and offer a platform for sharing PGR within the Mesoamerican Network of PGR (REMERFI) and other national, regional or global mechanisms.

3. COMMON FUND FOR COMMODITIES (CFC)

8. The Common Fund for Commodities is an intergovernmental financial institution. The Agreement Establishing the Common Fund for Commodities was negotiated under the aegis of the United Nations Conference on Trade and Development (UNCTAD). Currently 104 Countries plus the European Community, the African Union and the Common Market for Eastern and Southern Africa (COMESA) are members of the Fund.

9. Examples of the projects financed by the Common Fund in the area of conservation and improvement of genetic material are given below:

10. **Groundnut Germplasm Conservation:**

Project Executing Agency: ICR/SAT Sahelian Center

- Niger Project Cost US\$ 4,768,469
- Common Fund Grant US\$ 2,963,469

The central objective of this project is to improve the sustainability of groundnut production systems in Burkina Faso, Côte d’Ivoire, Mali, Niger, Nigeria and Senegal through increased access to, and exploitation of, the world’s groundnut germplasm for breeding improved varieties of groundnuts. Under the project 6000 accessions were assembled and conserved in a medium-storage gene bank at ICRISAT-Niamey, Niger. These accessions have been fully characterised and evaluated for traits of economic importance including resistance to diseases, drought and other useful traits.

12. **Cocoa Germplasm Utilisation and Conservation: A Global Approach**

Project Executing Agency: International Plant Genetic Resources Institute (IPGRI)

- Project Cost US\$ 10,167,000
- Common Fund Grant US\$ 2,942,000

The overall objective of the project is to enable cocoa-producing countries i.e. Cameroon, Côte d’Ivoire, Ghana, Nigeria, Malaysia, Papua New Guinea, Brazil, Ecuador, Trinidad and Tobago and Venezuela to incorporate a broader genetic diversity into their cocoa breeding programmes. The project involves evaluation and selection of clones/hybrids, multi-locational clonal and hybrid trials and reinforcement of population breeding programmes; conservation, characterisation and distribution of cocoa germplasm. The total number of genotypes evaluated for Phytophthora resistance, Witches’ broom, Insects (mirids, aphids) and VSD resistance under the project are approximately 3300.

13. **Coconut Germplasm Utilisation and Conservation to Promote Sustainable Coconut Production:**

Project Executing Agency: International Plant Genetic Resources Institute (IPGRI)

- Project Cost US\$ 3,732,635
- Common Fund Grant US\$ 1,195,778

The objective of the project is to contribute to sustainable coconut production through selection of adapted, high yielding varieties and hybrids, and conservation and exchange of germplasm for current and future breeding work. The 18 countries participating in the project are Benin, Côte d'Ivoire, Tanzania, Fiji, India, Indonesia, Malaysia, Papua New Guinea, Philippines, Samoa, Solomon Islands, Thailand, Tonga, Vanuatu, Vietnam; Brazil, Jamaica and Mexico. Under the project an additional 541 coconut populations have been collected. Passport and characterisation data of 1,338 accessions conserved in national genebanks of 22 countries have been registered in the International Coconut Resources Database.

14. Conservation, Characterisation, Collection and Utilisation of Genetic Resources in Olives:

Project Executing Agency: Olive Research Institute

- | | |
|---------------------|----------------|
| • Project Cost | US\$ 1,150,181 |
| • Common Fund Grant | US\$ 512,666 |

The project is a germplasm collection, characterisation and conservation project, aimed at determining and describing the genetic make-up of the olive species. The results obtained under the project are :

- Algeria : Institut Technique de l'Arboriculture Fruitière et de la Vigne (ITAF) produced 2434 genotypes of 37 crosses.
- Egypt : Horticulture Research Institute (HRI) produced 307 genotypes of 44 crosses.
- Morocco: Institut National de la Recherche Agronomique (INRA) produced 1712 genotypes.
- Tunisia : Institut de l'Olivier produced 1412 genotypes of 68 crosses.
- Turkey: Olive Research Institute (ORI) produced 5865 genotypes of 180 crosses.

15. Sugarcane Variety Improvement in South East Asia and the Pacific for Enhanced and Sustainable Productivity:

Project Executing Agency: The Philippine Sugar Research Foundation Inc.

- | | |
|---------------------|----------------|
| • Project Cost | US\$ 2,104,000 |
| • Common Fund Grant | US\$ 1,422,160 |

The project aims to increase and stabilise the productivity of sugarcane in Bangladesh, Indonesia, Malaysia, Papua New Guinea, Philippines and Thailand through a regional effort on genetic enhancement. Exchange, testing/evaluation and dissemination of improved varieties; their systematic improvement through conventional and biotechnology-assisted breeding; and increased national capabilities to absorb, adopt and utilise new and emerging bio and information technologies for sugarcane breeding applications are the focus of the project. Protocol for the exchange of varieties among participating countries has been established and some 35 varieties successfully exchanged. The project has also initiated the process of varietal characterisation. Some 50 micro satellite markers have been identified and fingerprinting of elite traits has been completed.