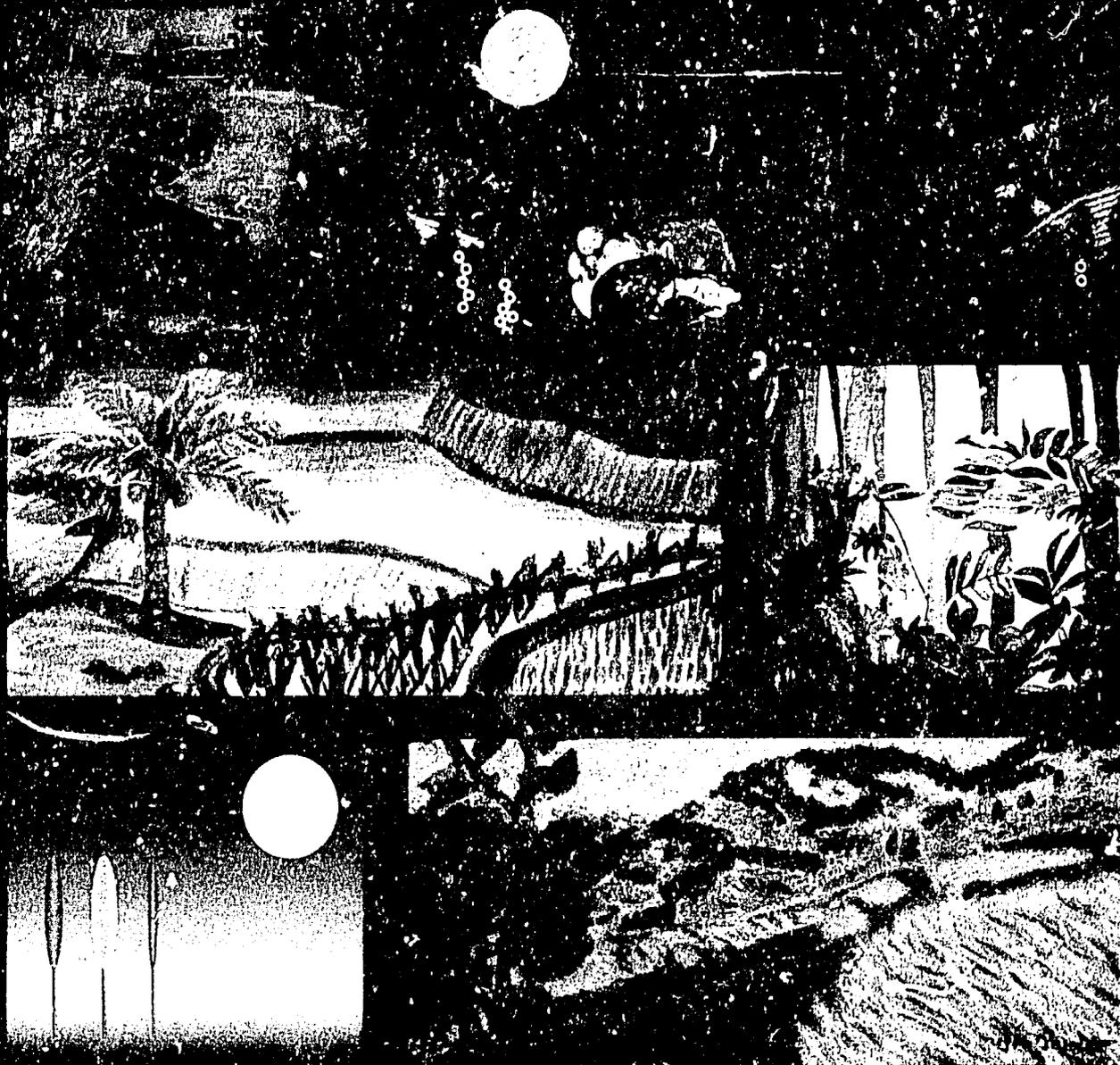


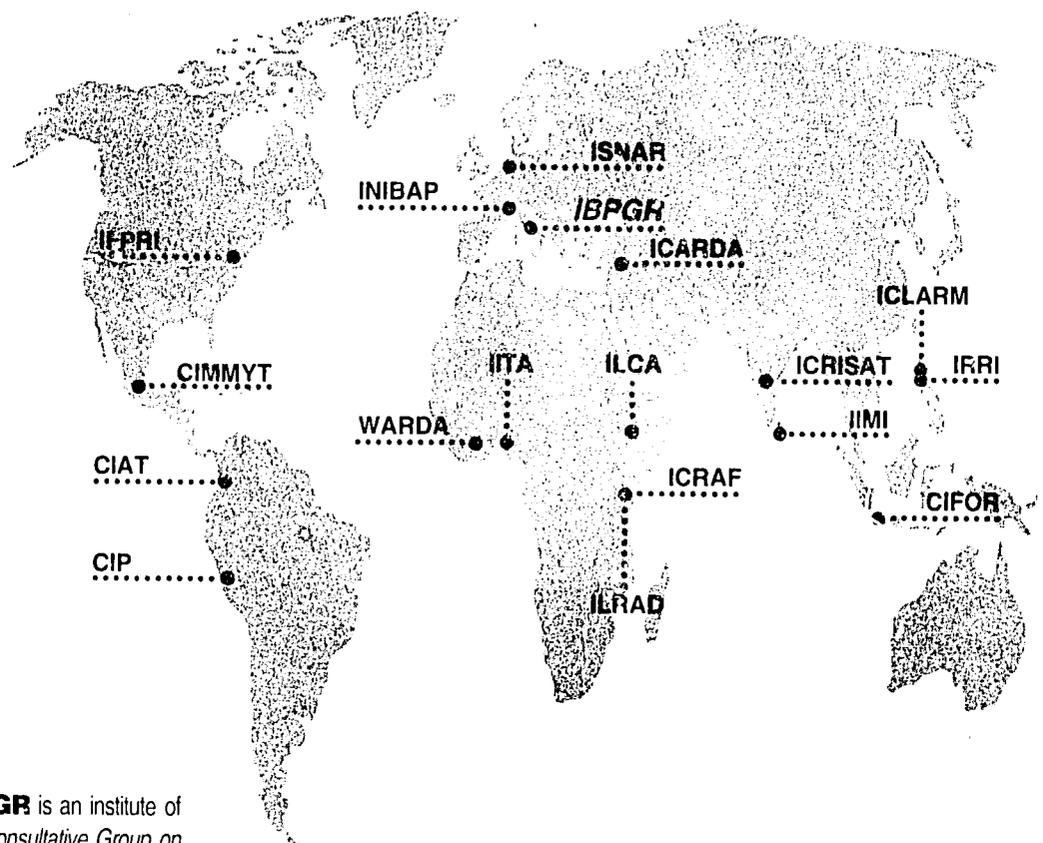
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Annual Report 1992 IBPGR §



INTERNATIONAL
BOARD FOR
PLANT
GENETIC
RESOURCES

International Agricultural Research Centres of the CGIAR



IBPGR is an institute of the *Consultative Group on International Agricultural Research*. The CGIAR is an informal association of 40 public and private sector donors that supports a network of 18 international agricultural research centres. The Group was established in 1971. Its mission is: through international research and related activities, and in partnership with national research systems, to contribute to sustainable improvements in the productivity of agriculture, forestry, and fisheries in developing countries in ways that enhance nutrition and well-being, especially among low-income people

- CIAT - Centro Internacional de Agricultura Tropical, Cali, Colombia
- CIFOR - Center for International Forestry Research, Bogor, Indonesia
- CIMMYT - Centro Internacional de Mejoramiento de Maiz y Trigo, Mexico D.F., Mexico
- CIP - Centro Internacional de la Papa, Lima, Peru
- IBPGR - International Board for Plant Genetic Resources, Rome, Italy
- ICARDA - International Center for Agricultural Research in the Dry Areas, Aleppo, Syria
- ICLARM - International Center for Living Aquatic Resources Management, Manila, Philippines
- ICRAF - International Council for Research in Agroforestry, Nairobi, Kenya
- ICRISAT - International Crops Research Institute for the Semi-Arid Tropics, Patancheru, India
- IFPRI - International Food Policy Research Institute, Washington DC, USA
- IIMI - International Irrigation Management Institute, Colombo, Sri Lanka
- IITA - International Institute of Tropical Agriculture, Ibadan, Nigeria
- ILCA - International Livestock Centre for Africa, Addis Ababa, Ethiopia
- ILRAD - International Laboratory for Research on Animal Diseases, Nairobi, Kenya
- INIBAP - International Network for the Improvement of Banana and Plantain, Montferrier-sur-Lez, France
- IRRI - International Rice Research Institute, Los Baños, Philippines
- ISNAR - International Service for National Agricultural Research, The Hague, Netherlands
- WARDA - West Africa Rice Development Association, Bouaké, Côte d'Ivoire

11-10-1992

International Board for
Plant Genetic Resources

**Annual Report
1992**

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IBPGR and its mandate

The International Board for Plant Genetic Resources (IBPGR) is an autonomous international scientific organization operating under the aegis of the Consultative Group on International Agricultural Research (CGIAR). IBPGR was established by the CGIAR in 1974 and is administered by the Food and Agriculture Organization of the United Nations.

IBPGR's mandate is to advance the conservation and use of plant genetic resources for the benefit of present and future generations.

Financial support for the core programme of IBPGR was provided in 1992 by the Governments of Australia, Austria, Belgium, Canada, the People's Republic of China, Denmark, France, Germany, India, Italy, Japan, the Republic of Korea, the Netherlands, Norway, Spain, Sweden, Switzerland, the UK, the USA and the World Bank.

Foreword

IBPGR had much to celebrate in 1992. Representatives of the governments of Belgium, Egypt, India, Jordan, Syria and Turkey added their signatures during the year to an agreement establishing the International Plant Genetic Resources Institute as an independent institute of the CGIAR. This was a reaffirmation of the support of the international community for IPGRI, whose Establishment Agreement was signed in 1991 by the Governments of China, Denmark, Italy, Kenya and Switzerland. Significant progress was made in the ratification by the Italian Government of the Establishment and Headquarters Agreements; the final step in the start of IPGRI's operation. Towards the end of 1993, IBPGR will probably have ceased operations, to be replaced by IPGRI, an Institute with a new look and a new direction.

Work was already well under way in 1992 to ensure a smooth transition. IPGRI's Strategic Plan - 'Diversity for Development' - was finalized and plans were initiated for its implementation. The Institute's regional presence was further strengthened to facilitate support to national plant genetic resources systems. The introduction of new programme elements in the areas of forest genetic resources and ethnobotany broadened the base of the Institute's technical expertise. Partnerships were strengthened with several non-governmental organizations, leading to increased collaboration on activities relating to plant genetic resources conservation. The move to a project-based system started in 1992 with the development of a set of projects that will form the basis of IPGRI's operations over the coming years.

While a great deal has been accomplished over the past year, both within IBPGR and in the genetic resources community globally, much more remains to be done. Despite increased public awareness of the importance of conserving biodiversity, thousands, or even tens of thousands of plant species continue to disappear annually throughout the world.

The establishment of IPGRI

The International Plant Genetic Resources Institute (IPGRI) was established on 9 October 1991 when representatives of the Governments of China, Denmark, Italy, Kenya and Switzerland signed IPGRI's Establishment Agreement. IPGRI's international status was further strengthened with the signature of the Agreement by representatives of the Governments of Belgium, Egypt, India, Jordan and Turkey on 9 October 1992 and by a representative of the government of Syria on 9 December 1992. IPGRI's Headquarters Agreement with the Italian Republic was initialled on 10 October 1991, and the final text is expected to be approved by all ministries concerned in March 1993. The Agreement will thereafter be submitted to the Italian Parliament for ratification. In the interim period, the Institute will continue to operate under the administration of FAO as the International Board for Plant Genetic Resources.

A critical event in 1992 was the United Nations Conference on Environment and Development, which succeeded in definitively linking conservation of biological diversity to development in the popular imagination. The message of UNCED - that the well-being of future generations depends on the continued availability of biological resources - found its articulation in the Convention on Biological Diversity, which was signed by over 150 countries.

IBPGR has pledged to make its scientific and technical expertise available for the implementation of the Convention, particularly through assisting national programmes to meet their obligations. To this end, we are

***Diversity* for Development**

The strategy for the International Plant Genetic Resources Institute - 'Diversity for Development' - benefited from widespread consultation in the period 1990-1992. In a series of meetings organized by IBPGR, scientists and genebank managers from 40 countries gave generously of their time and put forward new and positive suggestions that helped to refine the Institute's strategic direction. IBPGR's staff and Trustees have been involved at all stages, and the Technical Advisory Committee of the CGIAR gave many valuable comments and suggestions on a draft of the Strategy in March 1992. Helpful comments were also received from our donors.

'Diversity for Development' has been approved by the IBPGR and IPGRI Boards and will be published early in 1993. The Strategy is already being implemented by IBPGR and will provide the strategic direction for the next decade. The major elements of 'Diversity for Development' form the basis of IPGRI's programme activities and are summarized below.

The mandate of IBPGR/IPGRI is to advance the conservation and use of plant genetic resources for the benefit of present and future generations. IBPGR/IPGRI's mission is to encourage, support and engage in activities to strengthen the conservation and use of plant genetic resources worldwide, with special emphasis on the needs of developing countries. It will work in partnership with other organizations, undertake research and training, and provide scientific and technical advice and information.

IBPGR/IPGRI's first objective is to assist countries, particularly developing nations, to assess and meet their needs for conservation of plant genetic resources, and to strengthen links to users.

The Institute will pay particular attention to those countries that lack the capacity to develop a fully effective system themselves, assisting them to assess their own needs for genetic resources conservation, exchange and use. Increased emphasis will be given to surveying genetic resources to plan collecting missions, early warning systems for genetic erosion, appropriate sampling strategies and the handling, characterization and evaluation of accessions.

The Institute will assist national and regional programmes in developing countries to become self-sufficient in training researchers and technicians. The Institute will provide specialized expertise and teaching materials and encourage educational institutions to include plant genetic resources in their programmes.

IBPGR/IPGRI's second objective is to build international collaboration in the conservation and use of plant genetic resources. The Institute will encourage and support the formation of networks, both on a crop and a geographical basis. Networking will concentrate on those plants of key importance to regional agriculture or forestry. CGIAR centres will continue as important partners in the conservation and use of a range of species.

particularly grateful to FAO for its commitment and support, as we begin the final steps of the transition from IBPGR to IPGRI. Also, we would like to express our deep gratitude to the donors, whose continued support makes it possible for us to lend our assistance to the global effort to safeguard the world's plant genetic resources and to ensure that they are made available for use by present and future generations.

G.C. Hawtin
Director

W.E. Tossell
Board Chair



– IPGRI's Strategy

The Institute will work towards a system that ensures that the diversity of useful plants is safely conserved and that accessions in genebanks are documented, conserved, whether *in situ* or *ex situ*, under safe conditions, duplicated in at least one other location and accessible for use through active collections. The Institute will continue to encourage and assist institutions to maintain the highest standards of conservation.

As well as cooperating closely with national programmes, the Institute will work jointly with FAO in providing scientific and technical advice and will provide support to the initiatives of the FAO Commission on Plant Genetic Resources. The Institute will continue to collaborate closely with international conservation NGOs, and forge closer links with key developmental NGOs.

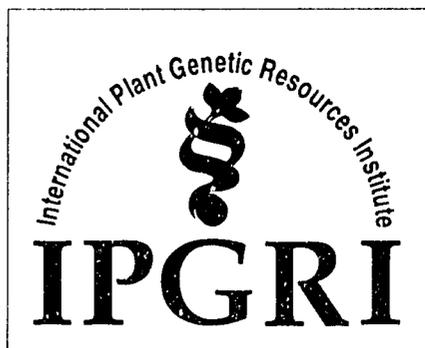
Since no country can survive on its own indigenous genetic resources, we will assist all countries to share efforts and exchange resources.

IBPGR/IPGRI's third objective is to develop and promote improved strategies and technologies for plant genetic resources conservation. Research will concentrate on 'generic' problems, the solutions to which are likely to be broadly applicable. Identifying, collecting and retaining diversity in collections, improved conservation technology and plant health are major topics. Work on wild relatives of crops and on forest genetic resources will involve *in situ* conservation.

The Institute will address the continuing need to develop and improve computerized techniques of storage and retrieval of information on genebank accessions, and to facilitate data exchange. The Institute will initiate research concerned with conserving traditional knowledge about plant characteristics and local practices for using and conserving plant genetic resources.

IBPGR/IPGRI's fourth objective is to provide an information service to inform the world's genetic resources community of both practical and scientific developments in the field. Technical and scientific publications will be targeted primarily at staff of national programmes. An active public awareness programme will target policymakers in donor and partner countries, and the groups that influence them, as a means of strengthening support for plant genetic resources activities worldwide.

IPGRI's
new logo



Programme activities

Introduction

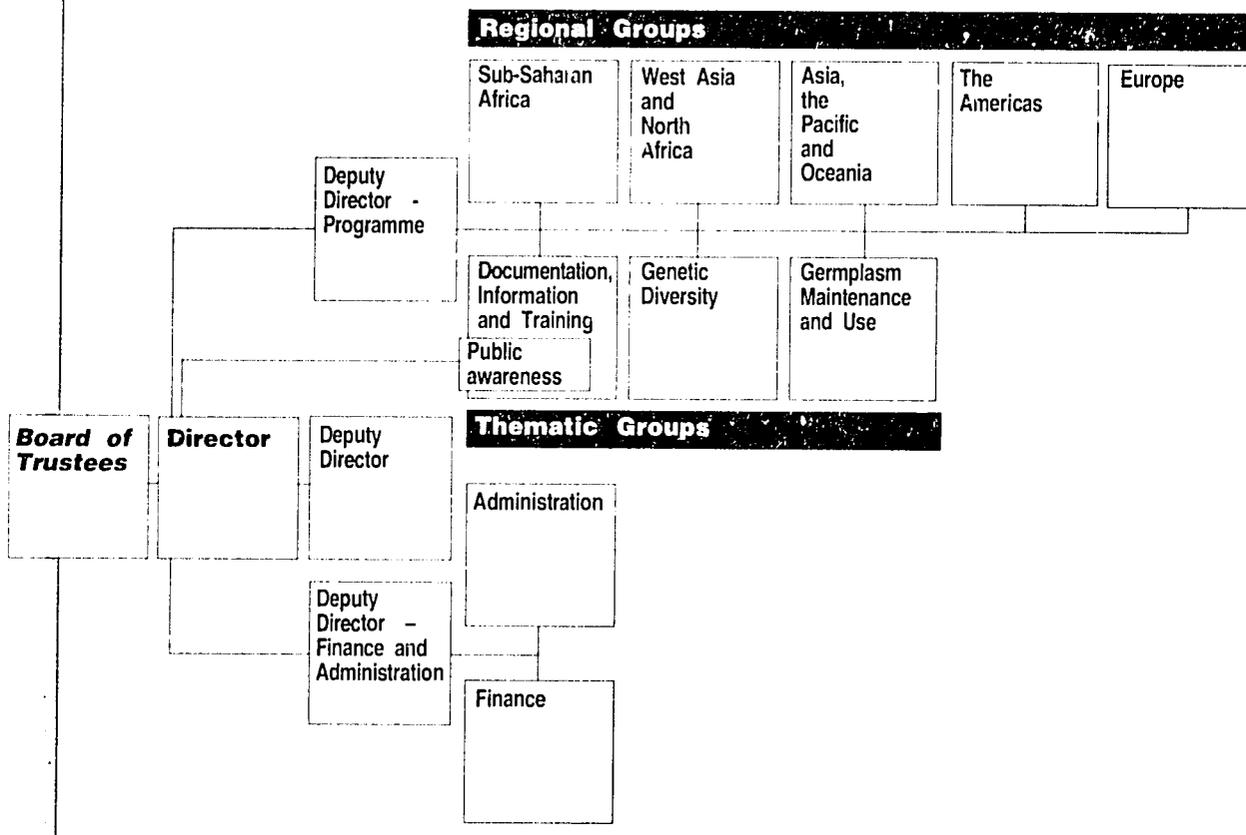
IBPGR began to implement its Strategy, 'Diversity for Development', in March/April 1992. The Strategy outlines a single coherent programme which fulfills the Institute's four major objectives (see pp. 4-5). To carry out this programme, the Institute in 1992 adopted and implemented a structure of eight programme groups (see Fig. 1 below).

The regional structure comprises five Regional Groups which are responsible for the Institute's work in:

- **Sub-Saharan Africa**
- **West Asia and North Africa**
- **Asia, the Pacific and Oceania**
- **The Americas**
- **Europe**

The Regional Groups are responsible for developing and reviewing regional strategies, providing assistance to national and regional pro-

Fig. 1. The organization of IBPGR in 1992



grammes, formulating and where appropriate becoming directly involved in research, collecting, training, documentation and information activities. They have an essential role in bringing genetic resources expertise to the developmental and cultural context of the regions and fostering links between programmes. The locations of IBPGR's Offices in 1993 are detailed on the back cover of this Report. Fig. 2 below shows a map of IBPGR's geographic structure in 1992.

In addition to the five Regional Groups, three Thematic Groups have been established at Headquarters. These Groups are responsible for developing and coordinating research and information activities to address issues of inter-regional or global relevance in their respective subject areas. They are also responsible for providing scientific and technical support to the regions. The three Groups are:

■ **Genetic Diversity**

covering extent and distribution of genetic diversity, its measurement, *in situ* and *ex situ* collecting, ethnobotany and forest genetic resources conservation.

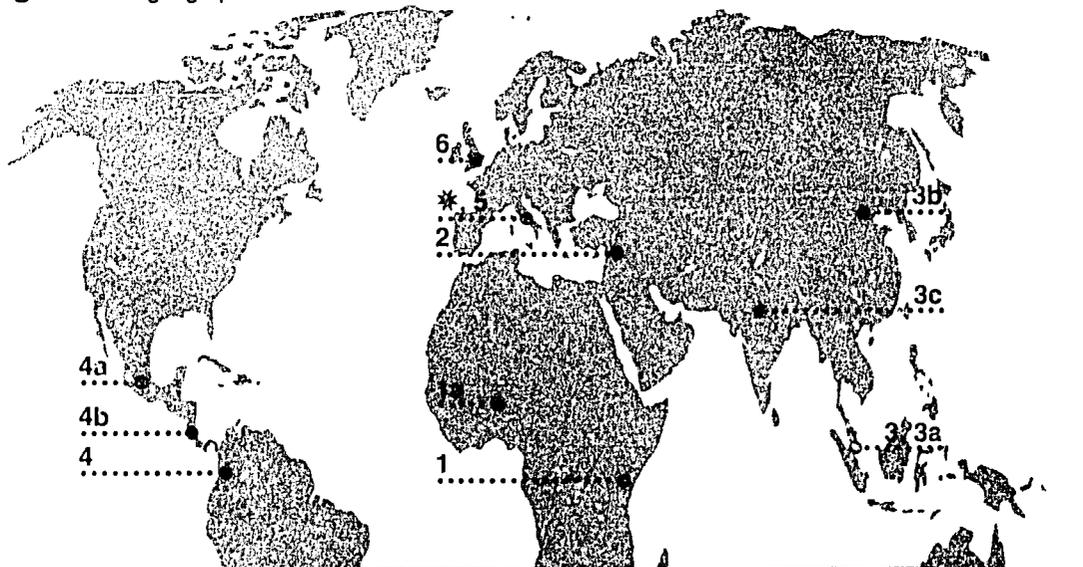
■ **Germplasm Maintenance and Use**

covering conservation and use strategies and technologies, germplasm management, seed and *in vitro* conservation and germplasm health.

■ **Documentation, Information and Training**

covering germplasm documentation, documentation technology, library and bibliographic services, publications, training coordination and public awareness.

Fig. 2. The geographical structure of IBPGR in 1992



* IBPGR Headquarters, Italy

IBPGR Regional Offices

- | | |
|---|--|
| 1. Sub-Saharan Africa. Kenya | 4. The Americas. Colombia |
| 1a. Office for West Africa, Niger | 4a. Office for Central and North America and the Caribbean, Mexico |
| 2. West Asia and North Africa. Syria | 4b. Seed Handling Unit, Costa Rica |
| 3. Asia, the Pacific and Oceania. Singapore | 5. Europe. Italy |
| 3a. IBPGR Seed Handling Unit, Singapore | 6. IBPGR Seed Handling Unit, UK |
| 3b. Office for East Asia, China | |
| 3c. Office for South Asia, India | |

All programme staff of IBPGR are assigned to either a Regional or a Thematic Group. Each is led by a Group Leader who is responsible for developing strategies, coordinating the allocation of resources to projects, supervising and monitoring project inputs, and recruiting and appraising staff. Group Leaders were appointed for all groups in 1992. Although both the old and the new structures were in operation during 1992, this Annual Report provides an overview of the IBPGR programme activities within the new structure.

Regional Groups

Sub-Saharan Africa Group



Introduction

The activities of the Sub-Saharan Africa Group concentrated on providing technical and professional support to the development of national programmes in the region. Time was also spent in organizing and participating in various regional and international meetings on plant genetic resources. The Group assisted some programmes in undertaking more of their own plant genetic resources activities. Nearly all the countries in East and southern Africa have formally established a programme of plant genetic resources with staff allocated and operational expenses funded from the national budget. The inputs vary from country to country but the general trend is towards greater commitment and support at government level.

During the year, the Nairobi office became the main IBPGR Office for Sub-Saharan Africa. A Group Leader was appointed as well as a staff member to work on genetic diversity/biogeography. Two locally recruited scientists will handle documentation, information and training, and germ-plasm conservation. Training, networking facilitation as well as the overall coordination of the group will be the responsibility of the Group Leader. A staff member in charge of conservation started work in December in the IBPGR office at the ICRISAT Sahelian Centre in Niamey, Niger.

National programme development

The development of national programmes in the region continued.

The Genebank of Kenya received the global collection of 1222 *Sesamum* accessions from the Hebrew University, Israel. This satisfied a request put to IBPGR in 1990 to locate a site for long-term duplicate conservation of the global collection of *Sesamum* and the subsequent request to KARI for the Kenyan genebank to accept this responsibility. IBPGR assisted the Ugandan national programme through the donation of conservation equipment, i.e. a sealer and about 2000 aluminium foil packets. IBPGR funded the purchase of a computer, printer and necessary software for the Kenyan genebank.

Subregional programme development

With other organizations, particularly the Nordic Gene Bank, IBPGR has been closely involved at all stages of the SADC project. The first five-year

phase for the SRGB programme (1988-92) was completed as scheduled. All the professional staff of the genebank have been recruited. National Plant Genetic Resources Committees have been formed in all ten member countries (Fig. 3). Staff have been appointed and posted by all of the national programmes.

Through the SRGB all the SADC countries receive equipment to facilitate collecting, conservation, documentation and regeneration, multiplication and characterization of plant germplasm. The development of the physical infrastructure to accommodate the genebanks in various countries is progressing steadily. The SRGB programme has trained 55 nationals over a period of five years. In Botswana, the inventory of all major crops has been completed and computerized. In Tanzania, the inventory has been completed in the northern and southern regions, with direct assistance from IBPGR.

Collecting

IBPGR funded a collecting mission to the arid and semi-arid areas of Tanzania covering Morogoro, Dodoma, Arusha, Kilimanjaro, Mwanza, Mara, Shinyanga, Tabora, Singide and Iringa areas (see Table 1, p. 21).

Training

IBPGR facilitated the training of 14 national programme scientists from the SADC region at ILCA, Addis Ababa in genebank management techniques.

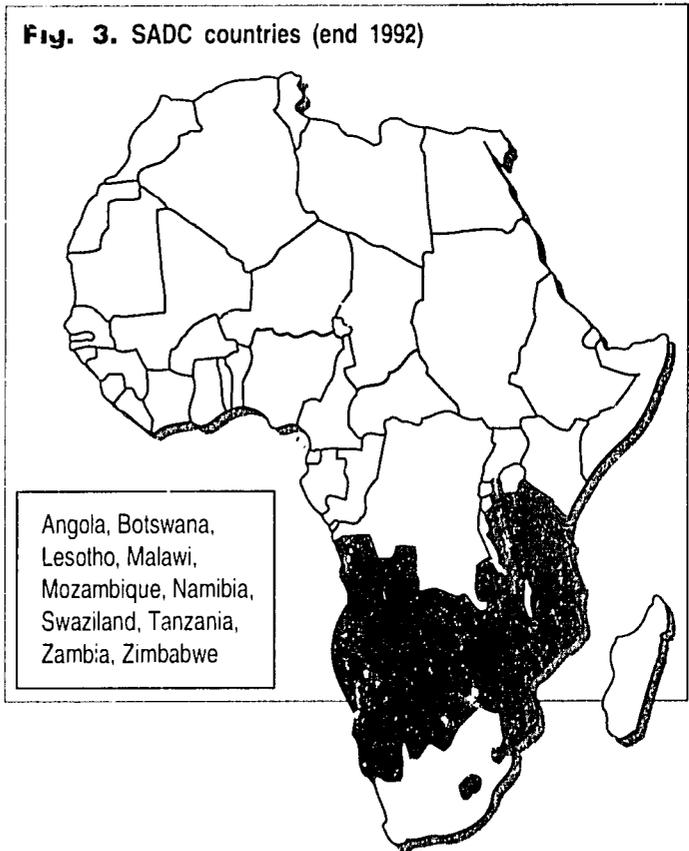
A training course in germplasm management and collecting was held for two weeks in April by staff of IBPGR, ILCA, SRGB and NGB. This course took place in Matopos, Zimbabwe and trained staff from all SADC countries. It was funded by the SRGB and also involved the participation of ICRISAT.

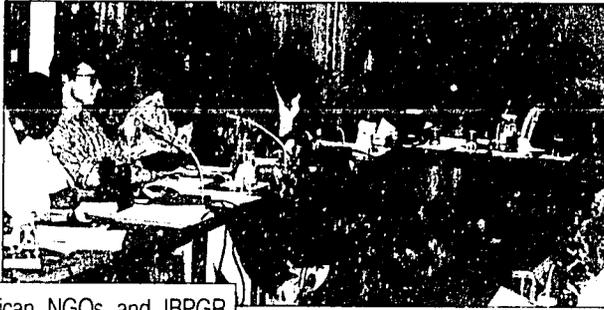
IITA, IBPGR and FAO jointly sponsored a course on plant genetic resources collecting, utilization and management at IITA in Nigeria for 14 African participants.

Meetings

Traditional crops seminar

A seminar sponsored by CTA, IBPGR, KARI and UNEP on 'Safeguarding the Genetic Basis of Africa's Traditional Crops' took place in October 1992 at the UNEP complex in Nairobi. The seminar brought together (for the first time) representatives of United Nations agencies (FAO, UNEP), IARCS





African NGOs and IBPGR met in Nairobi to discuss collaboration in plant genetic resources conservation at the farmers' level

such as ICRISAT, CIRAD, national plant genetic resources programmes from Kenya, Sudan, Uganda, Ethiopia, Nigeria, Mauritius and Zambia, NGOs, as well as representatives of farmers and herbalists. The seminar addressed issues related to traditional crop germplasm, its utilization and conservation, indigenous knowledge, capacity building and farmers' rights. The proceedings will be published in

1993 with detailed recommendations for future integrated action on plant genetic resources of traditional crops.

IBPGR/NGO roundtable

A meeting between African NGOs and IBPGR was held in October 1992 in Nairobi. The meeting identified areas for possible collaboration in addressing better the needs of plant genetic resources conservation at the farmers' level (see p. 48 for further details).

Ugandan Workshop

The Uganda national programme held a successful workshop in November, jointly funded by IBPGR, the Ugandan Government, SIDA and FAO. The workshop developed an action plan for plant genetic resources activities in the area.

West Asia and North Africa Group



Introduction

The IBPGR Regional Office for West Asia and North Africa was transferred to ICARDA, Syrian Arab Republic during 1992, with two staff members. The physical location of the Office ensures that it will work in close cooperation with ICARDA and national programmes in the region.

National programme development

The WANA Network on Plant Genetic Resources was established in late 1992 with the participation of 13 countries from the region and representatives of ACSAD, FAO, IBPGR and ICARDA. The WANA Regional Office will serve as a secretariat to the Network. A committee composed of national plant genetic resources leaders of member countries and representatives of international and regional institutions was formed to identify common problems, prioritize collaborative activities and open new avenues of collaboration with other actors in this field, both regionally and globally. Six working groups were established.

The WANA Network on Plant Genetic Resources

Six working groups on:

- cereals
- food legumes
- horticultural crops
- pasture and forage
- industrial crops
- in situ* conservation and biodiversity.



L. Guarino, IBPGR

Aspects of Socotra Islands

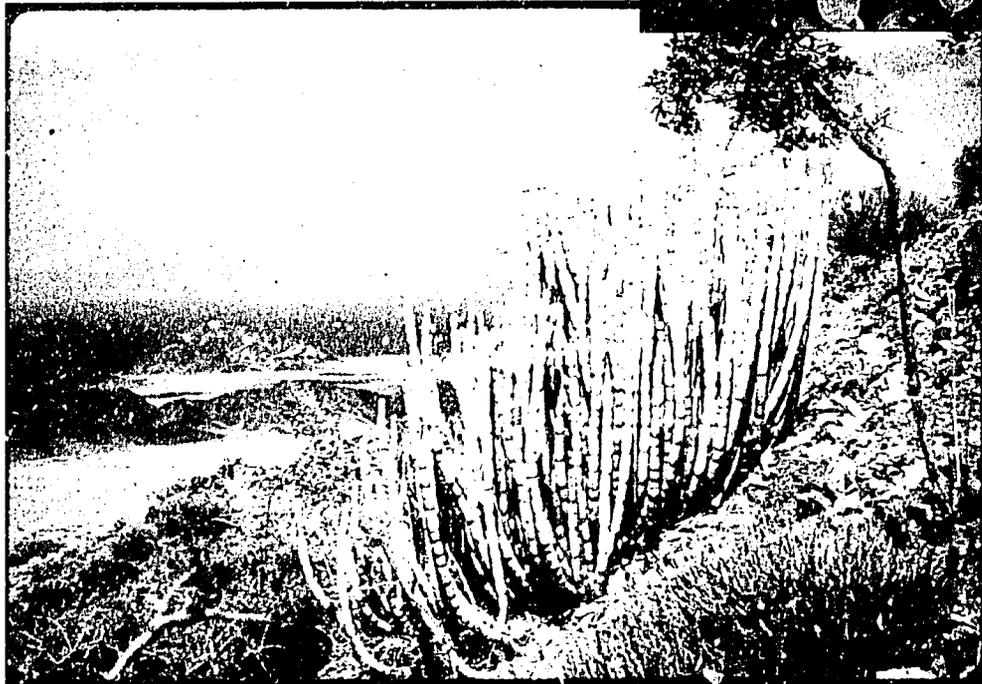
Top: The summit of the Haffier mountains with a dragon's blood tree (*Dracaena cinnabari*) in the foreground.

Centre: *Taverniera sericophylla*, previously thought to be extinct, found again along the western coast of Socotra.

Bottom: *Euphorbia abdelkuri*, found on the island of Abd al-Kuri



A. Miller and J. Nyberg,
Royal Botanic Garden, Edinburgh



A. Miller and J. Nyberg, Royal Botanic Garden, Edinburgh

The Regional Group Leader visited Cyprus, Egypt, Iran and Morocco to provide technical and scientific advice to the national programmes of those countries. A project proposal was developed for external funding to strengthen the national genebank of Egypt.

Collecting in the region: the exploration of Socotra Islands

The botanical exploration of the Socotra Archipelago in Yemen continued in 1992 through the participation of one of the IBPGR collectors based in Cyprus. This work was started in 1989 by IBPGR, the Royal Botanic Gardens, Edinburgh, UK, the El-Kod Agricultural Research Centre, Yemen and The Agricultural Extension and Research Authority, Yemen.

Exploration was extended to islands in the archipelago in addition to the main island, Socotra. In particular Abd-Al-Kuri island was visited by botanists for the first time since 1967. On Socotra itself, exploration concentrated on the high altitude areas and on the western coastal areas. The endemic leguminous shrub *Taverniera sericophylla*, previously thought to be extinct and listed as such in the Plant Red Data Book, was found again along the western coast. Seeds were collected and are being stored and grown both in Edinburgh and Yemen. Approximately 500 herbarium species were also collected, bringing the Socotran collection to almost 1500 accessions.

Asia, the Pacific and Oceania Group



Introduction

In September 1992, the new Regional Office in Singapore started operation with the arrival of the Group Leader and the Genetic Diversity/Conservation Officer. Close liaison with the coordinators and staff in the two existing Offices, in New Delhi (responsible for South Asia) and Beijing (responsible for East Asia), was quickly achieved through a regional staff meeting. During this meeting, a number of challenges and opportunities for IBPGR in this extended region were identified and these are now reflected in a set of IPGRI projects that will be implemented over the next five years. Work continued to develop methodologies for work with national programmes in jointly assessing their capabilities and needs. During the year, IBPGR accepted the mandate to establish a global Coconut Genetic Resources Network with a coordinator to be based in the Asia region.

National programme development

The numerous visits by regional staff to countries and institutions in the region in 1992 helped in many aspects of national programme development. For example, visits of staff to the Maldives helped the authorities there to focus on an action plan to conserve biodiversity on designated islands, while visits to Vietnam set the stage for a comprehensive assessment and plan for a crop, forest and medicinal plant genetic resources strategy.

Subregional programme development

The Asia, Pacific and Oceania region includes vast cultural, ecological and geographical differences. Subregional programmes are therefore important in bringing together a limited number of countries that share similar conditions. Two subregional meetings were held during 1992.

The RECSEA group, now into its 17th year, includes members from Indonesia, Malaysia, Myanmar, Philippines, Thailand and Papua New Guinea and observers from Singapore and Vietnam. During the RECSEA meeting, held in Chiang Mai, Thailand, November 1992, it was confirmed that RECSEA must establish greater autonomy if it is to remain effective. IBPGR offered to provide continued support to RECSEA during this transitional period.

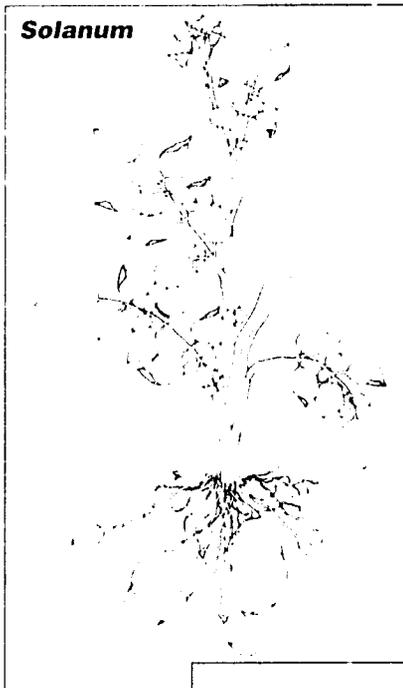
An informal meeting of south Asian plant genetic resources coordinators took place in Peradeniya, Sri Lanka in December 1992. Member countries include Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka. During this meeting, specific activities were planned to help strengthen the management and use of plant genetic resources among member countries. These will include developing common directories of institutions and germplasm accessions, developing a collecting manual, regional training on genebank documentation, and an agreement that bilateral exchange of germplasm will be mediated as necessary through the IBPGR New Delhi Office. Country participants at this meeting strongly endorsed the various elements of the planned IBPGR regional project set. Work plans were drawn up that included specific activities to be funded in 1993.

A third informal subregional grouping exists among the east Asian countries. Plant genetic resources coordinators from China, Japan, DPR Korea, Rep. Korea and Mongolia meet occasionally. Such subregional programmes will continue to receive strong support as part of regional activities.

Collecting

Several missions collected in the region. About 250 accessions of various bean species (mungbean, pea, soyabean) were collected in the Republic of Korea. An apple germplasm collecting expedition to the mountainous southwestern areas of China produced 500 accessions of 21 species. Locally valued aquatic vegetables, including 24 lotus and wild rice accessions, were collected in five provinces of China. Wild grape collecting in China yielded 25 samples.

In southern Asia, IBPGR-supported explorations and surveys conducted by NBPGR have now resulted in over 1400 accessions. These include 948 accessions of sesame from southern and western India, as well as from a joint NBPGR-BARI collecting trip in Bangladesh. The wild species *Sesamum alatum* and *S. laciniatum*, were both collected. This material will be characterized and evaluated with regional par-



ticipation in 1993. Asian maize diversity was sampled - 543 accessions were collected from northeastern India - while 28 accessions of eggplant representing six wild and cultivated species of *Solanum*, including *indicum*, *erianthum*, *surattense*, *torvum* and *hispidum*, were collected from Uttar Pradesh in northern India.

Training

Regionally based individual and short-course training is becoming a more important part of activities in the region. Three such training activities took place in 1992.

An on-the-job training programme sponsored by IBPGR was organized by NBPGR in New Delhi. Two trainees from Bhutan and Nepal learned about seed processing and conservation in September 1992. Two trainees from Bangladesh and Maldives received training on germplasm characterization and evaluation in October 1992. The trainees carried out practical work along with the NBPGR staff both in the field and in the laboratory.

The Vietnam Agricultural Science Institute hosted a three-week regional training course on the management of seed collections in Hanoi. The course was attended by 22 scientists involved with crop, forestry and medicinal plant genetic resources, from research institutes in Vietnam, Laos and Cambodia, and from non-governmental organizations in Vietnam, Cambodia and the Philippines. Emphasis was placed on the techniques to preserve seeds and the procedures to handle and document seed collections, using, for practical experience, the facilities of the institute's genebank. The course also covered *in vitro* and *in situ* conservation, the organization of a plant genetic resources programme, and the collecting, evaluation and use of germplasm. A two-day field trip provided practical experience in crop collecting and an introduction to *in situ* conservation in the Cuc Phuong National Park. Course instructors were provided by IBPGR, the host institute and drawn from other research and teaching institutions in Hanoi. Equipment for the course was assembled by the Seed Handling Unit in Singapore. The participants were very positive about this type of practical training and the sharing of experiences from governmental and non-governmental organizations in the region.

Trainees collecting germplasm, Viet Nam



J. Toll, IBPGR

A two-week IBPGR-sponsored training course on the conservation and utilization of plant genetic resources was held at the Great People's Studying House, hosted by the Pyongyang Crop Genetic Resources Institute of the Academy of Agricultural Sciences, DPR Korea. Of the 43 trainees, 40 were from the host country and three from Mongolia. The course was originally planned for 20 partici-

pants but was so popular that the number of trainees was doubled, allowing trainees from 15 institutions to attend. The lectures were given by the staff from the IBPGR Beijing Office and Dr Karl Hammer, Head of the Gatersleben Genebank in Germany.

Meetings

The first Steering Committee Meeting of the Coconut Genetic Resources Network was organized in Singapore in December 1992 by the Regional Office. Ten committee members along with representatives from donors and collaborating organizations considered aspects of organization of the new network, to be known as COGENT. Participants gave high priority to continuing the work on the international database of collections. Task forces were formulated to develop proposals or monitor other high priority areas including a collecting and conservation strategy, disease indexing studies to ensure the safe movement of coconut germplasm, and practical use of genetic markers to measure coconut diversity. Needs for training, publications and public awareness were identified. IBPGR was asked to give high priority to hiring a full time coconut coordinator to help ensure that these activities can be carried out as quickly as possible.

The International Buckwheat Symposium was held in Taiyuan, Shanxi Province in China in August 1992. IBPGR was one of the organizers and undertook the editing of the proceedings through the Beijing Office.

Other important regional activities

Two issues of the Regional Newsletter for Asia and the Pacific were published through the Delhi and Beijing Offices in 1992, in English and Chinese. Issue No. 8 featured biodiversity issues relating to the UNCED conference, and the 9th issue highlighted achievements of that important conference.

A project supported by the Beijing IBPGR Office is being carried out by the Wuhan Institute of Oilcrops in China. Researchers are screening the diversity of soyabean germplasm and identifying the types with high nitrogen-fixing capacity. This activity is expected to lead to better use of local soyabean germplasm in breeding programmes.

At the Beijing Botanical Gardens, the world safflower collection, comprising over 2000 entries, has been characterized for agromorphological and quality characteristics. This work was completed in 1992.



Americas Group



Introduction

One result of the reorganization of IBPGR's operations was the decision to build up staff strength for the Americas in the Cali Office. In addition to the Group Leader, one staff member responsible for Genetic Diversity moved to Cali in 1992, and two local professional staff were recruited to cover publications and public awareness, and documentation. The Office worked to assist national programmes establish their research priorities and apply innovative scientific approaches to problems of conservation and use of native genetic resources.

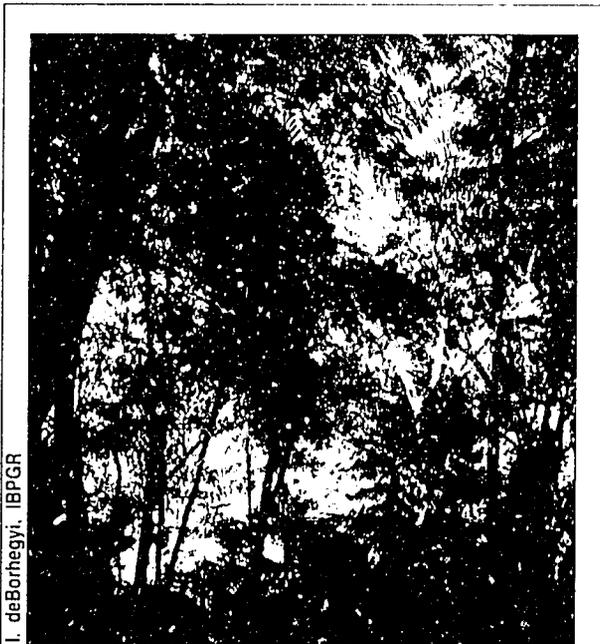
National programme development

Many countries in the region have established national programmes on plant genetic resources, including Argentina, Brazil, Chile, Ecuador, Mexico, Peru and Venezuela. Four Central American countries (Costa Rica, Honduras, Panama and Nicaragua) have created national commissions of plant genetic resources.

Colombia and Uruguay decided to create national programmes in 1992. The Colombian Agriculture Institute established a programme at its research centre at La Selva, near Mederlin. Similarly, the National Institute of Agricultural Research of Uruguay set up a national programme at the Agricultural Experiment Station at La Estanzuela, Colonia.

Subregional programme development

To achieve IBPGR's goals in the region, the Americas group has adopted a network approach that takes into account common features in the genetic diversity of a region. Three networks are currently under development. The Central American Network on Plant Genetic Resources (REMERFI) will cover Mexico, Belize, Guatemala, Nicaragua, El Salvador, Honduras, Costa Rica and Panama; the Andean Network on Plant Genetic Resources (REDARFIT) will cover Venezuela, Colombia, Ecuador, Peru and Bolivia; and the Amazonian Network on Plant Genetic Resources (TROPIGEN) will cover Guyana, French Guyana, Suriname, Venezuela, Colombia, Ecuador, Peru, Bolivia and Brazil. The three networks are being jointly sponsored by IBPGR and IICA, and with input from other organizations such as FAO. Other networks,



L. de Borhegyi, IBPGR

The Regional Office for the Americas is located in one of the richest regions in the world in terms of biodiversity. Out of the estimated 265 000 plant species of the planet, about 90 000 (33%) occur in Latin America. Of these, at least 45 000 species are found in three Andean countries - Colombia, Ecuador and Peru - which makes the northern Andean region one of the richest in plant diversity. This treasure trove of biodiversity has produced a number of crops of world importance such as maize, potato and tomato.

e.g. for the southern cone and the Caribbean, may be considered in the future.

IBPGR provided some support to the Cuban national programme on plant genetic resources at the Research Institute for Tropical Agriculture.

Collecting

One collecting mission was supported by the Regional Office: wild tuber-bearing *Solanum* in Columbia.

The Office supported multiplication and characterization of wild tuber-bearing *Solanum* of Argentina, and phenotypic and agronomic characterization of *Solanum quitoense* germplasm at Palmira, Colombia.

Fig. 4. Subregional networks in the Americas



Training

In 1992, the Regional Office sponsored two courses in conjunction with other organizations. Fifteen scientists from Latin American countries attended a course on *in vitro* germplasm management in Cali, Colombia in October 1992. The course was sponsored by CATIE, CIAT, CIP, COLCIENCIAS and IBPGR. A short course on plant genetic resources was held at the Facultad de Ciencias Agropecuarias, Universidad Nacional de Colombia, Palmira, Colombia, November/December 1992. The course was jointly sponsored by IBPGR, ICETEX, OAS and Universidad del Valle. IBPGR contributed five lectures and supported two of the 15 young scientists attending from the Andean region.

J. Hanson



Pineapple - Ananas

Meetings

The Regional Office jointly sponsored several meetings during the year, including the First Latin American Symposium on Pineapple (*Ananas comosus*) at the Centro Fruticola Andino, Cali, Colombia, and a meeting on Genetic Resources and Sustainable Development in the Colombian Amazon Region, at the Departamento de Planeación, Gobernación del Cauca, Florencia, Colombia. All helped to put plant genetic resources on the agenda of the region, as well as advance work in the individual areas.

Europe Group



Introduction

With the restructuring of IBPGR at the beginning of 1992, Europe became a region in its own right within IBPGR's programme. A major reason for this decision was serious concern about the security of the germplasm collections in central and eastern Europe and the CIS. These countries had developed strong plant genetic resources programmes with large and precious *ex situ* collections, but the difficult economic situation and political changes taking place in the area had jeopardized those programmes.

Europe has tremendous research potential that could contribute more actively to solving problems relevant to developing countries. IBPGR can play an active role in stimulating the transfer of technology and promoting collaboration between researchers in Europe and in developing countries.

National programme development

In Romania, the new National Genebank in Suceava, which was officially inaugurated in 1991, increased its staff complement and completed the construction of long-term storage rooms. IBPGR assisted the programme by contributing to the construction of seed-drying facilities and by providing a set of IBPGR publications for the genebank library.

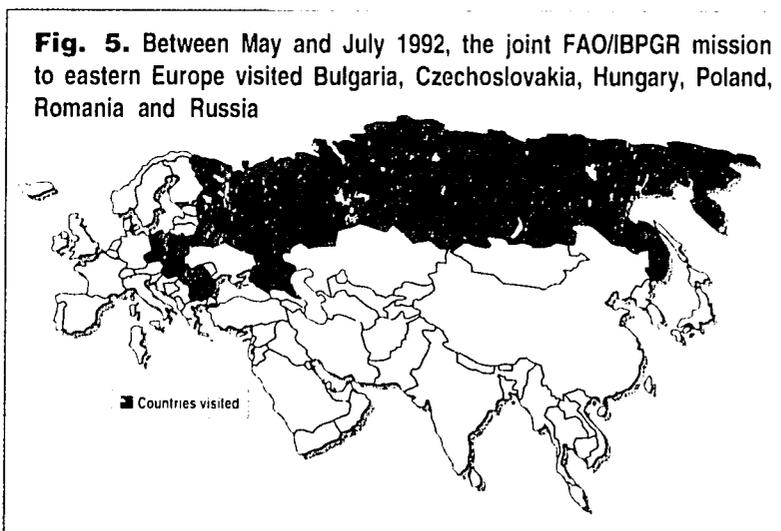
Subregional programme development

Following a recommendation of the FAO Commission on Plant Genetic Resources in November 1991, FAO and IBPGR organized a joint mission to survey the security of germplasm collections in eastern Europe (Fig. 5). Between May and July 1992 the mission established that the plant genetic resources programmes in most of these countries were experiencing serious difficulties. The transition to a market economy, the restructuring of agricultural research and the trend to privatize applied research such as plant breeding has resulted in drastic budget cuts to the programmes, accompanied by severe reductions in staff, sometimes up to 70%. The report of the mission analyzed the situation in each country and made recommendations to the respective governments.

In response, at least two of the countries have taken measures that have improved the security of their collections.

IBPGR was active during 1992 in identifying external sources of funding to provide assistance to the plant genetic resources programmes of eastern European countries. During International Centers Week in Washington in October 1992, a meeting attended by donor country representatives addressed the

Fig. 5. Between May and July 1992, the joint FAO/IBPGR mission to eastern Europe visited Bulgaria, Czechoslovakia, Hungary, Poland, Romania and Russia



situation. IBPGR presented a discussion paper on the topic. The meeting agreed on the need to coordinate the efforts of potential donors to avoid duplication of effort and ensure that emergency situations were addressed in time. A trust account has been set up at the CG Secretariat in the World Bank to receive donor contributions targeted to the CIS and eastern Europe. IBPGR agreed to act as the executing agency for this fund. By the end of 1992, several countries and UNDP had expressed a strong interest in supporting this initiative.

ECP/GR

Phase IV of ECP/GR started in 1990 and was planned to end in December 1992. The fifth Technical Consultative Committee meeting to evaluate Phase IV and decide on the future of the programme was postponed until the middle of 1993 to take into consideration the plant genetic resources programme that was being developed by the Commission of the European Communities. In addition, two working group meetings planned for 1992 had to be postponed until the spring of 1993.

Albania, the only country in Europe that had not joined ECP/GR, became a member in 1992. The Albanian National Fruit Tree Liaison Officer attended the 1992 *Prunus* working group meeting.

Working group meetings

The fourth meeting of the *Prunus* working group was held at an INRA station near Bordeaux in France, November/December 1992. INRA, Bordeaux, accepted the responsibility of maintaining the European *Prunus* Database, which will be transferred from the Nordic Gene Bank. INRA will appoint a staff member to be responsible for the future development of the database. The meeting also agreed on a timetable for future collaborative activities.

The reports of the 1991 Sunflower Working Group and the *Allium* Working Group meetings were published in 1992.

'Souvenir de Pierre Tochon' - blossoms of a peach variety, originally French, obtained from the Savoy region in 1891 and released commercially in 1906.

(from Monographie des Principales Variétés de Pêchers, Caillavet, H. and Souty, J. (1950) Société Bordelaise d'Imprimerie, Bordeaux, France)



Thematic Groups

Genetic Diversity Group

Introduction

The formation during 1992 of the Genetic Diversity Group as one of the three groups based at Headquarters confirmed the importance that IBPGR attaches to work on all aspects of genetic diversity for the conservation of plant genetic resources and ensures that a coordinated programme of work can be developed on major generic issues. The work of the Group will be reinforced by the considerable expertise that now exists within each of the Regional Groups in this aspect of IBPGR's programme. In 1992, two staff members from the former Research Programme took up new posts in the Americas and the Asia, Pacific and Oceania Groups.

The Genetic Diversity Group is primarily concerned with improving the ways in which a knowledge of the extent and distribution of genetic diversity in a target gene pool can be used to develop optimum conservation strategies. The Group is also concerned with improving the accessibility of the diversity in conserved germplasm. Much of the work in germplasm acquisition will be devolved to the Regional Groups although a strategic overview of collecting will be maintained at Headquarters.

A major event in 1992 was the organization of an International Workshop on Core Collections, jointly sponsored by IBPGR, CENARGEN, Brazil and CGN, the Netherlands. A welcome new initiative for the programme was a project concerned with the development of regeneration methods for outpollinated crops, which is funded by BMZ/GTZ (Germany). As foreshadowed in last year's Annual Report, work on the development of IBPGR's forest genetic resources programme was given high priority throughout the year and involved close collaboration with FAO and the relevant CGIAR centres.

Germplasm collecting

The year 1992 witnessed more focused collecting of diverse gene pools, especially those threatened with genetic erosion. In partnership with national programmes in many countries, a substantial number of samples of forages, cereals, grain legumes, roots and tubers, and fruits has been collected, particularly from tropical and subtropical regions (Table 1, p. 21).

Activities of the IBPGR collectors

One of the IBPGR collectors took part in an expedition to Socotra in Yemen, which is described on p. 12.

Editing continued of the IBPGR/FAO/IUCN/UNEP germplasm collecting manual, which is expected to be ready for publication in 1993.

A collector assisted the national programme in Cyprus both in developing plans to expand the current genebank into a full genetic resources unit and in surveying the distribution of diversity in *Aegilops* in Cyprus. He also updated IBPGR records on germplasm collecting.

Table 1. Germplasm collecting activities in 1992

Partner*	Country of origin	Target taxa	No. of samples
EAP, Honduras	Honduras	<i>Phaseolus</i>	188
		<i>Zea</i>	130
CENARGEN/EMBRAPA, Brazil	Brazil	<i>Manihot</i>	49
INTA, Argentina and INIA, Chile	Argentina and Chile	Forage grasses and legumes from south Patagonia	105
Sichuan Agric. Univ., Sichuan, China	China	<i>Malus</i>	500
Chengdu Inst. of Biology, Sichuan, China	China	<i>Vitis</i>	25
Wuhan Vegetable Science Inst., Hubei, China	China	Aquatic vegetables e.g. <i>Lotus</i> , <i>Zizania</i>	24
ICA and UNP, Colombia and IRFA, France	Colombia	<i>Ananas</i>	35
IR1, USA	Colombia	<i>Solanum</i>	129
INIVIT, Cuba	Cuba	<i>Ipomoea</i>	97
		<i>Manihot</i>	9
		<i>Xanthosoma</i>	2
		<i>Dioscorea</i>	3
		<i>Musa</i>	2
		<i>Colocasia</i>	1
NBPGR, India	Northeast India	<i>Zea</i>	543
	North India	<i>Solanum</i>	28
NBPGR, India and BARI, Bangladesh	India and Bangladesh	<i>Sesamie</i>	948
Crop Experiment Station/RDA, Rep. Korea	Rep. Korea	Pulse crops e.g. <i>Phaseolus</i> , <i>Glycine</i> , <i>Vigna</i>	250
ZLTRC, Tanzania and University of Southampton, UK	Tanzania	<i>Crotalaria</i>	64
		<i>Macrotyloma</i>	17
		<i>Dolichos</i>	8
		<i>Vigna</i>	13
		<i>Rhynchosia</i>	10
		<i>Pseudeminia</i>	4
INSA, Vietnam and CIAT, Colombia	Vietnam	Tropical/subtrop. forage legumes from humid/subhumid habitats	191
INSA, Vietnam	Vietnam	<i>Citrus</i>	67

*See pp. 60-61 for an explanation of the abbreviations in this table.

Following the restructuring of the IBPGR programme, the IBPGR Office in Cyprus closed in September 1992. One collector was redeployed to work on genetic diversity projects in the IBPGR Regional Group for Sub-Saharan Africa and the other took up the documentation and training position in the WANA Regional Office. The collector for southern Africa who had been based in the University of Zimbabwe during the period 1988-91 completed her assignment early in the year but was retained as a consultant to finish an ecogeographic study on the genus *Vigna*.

Germplasm distribution

In response to changing priorities in the IBPGR programme, the activities of the three IBPGR Seed-Handling Units were reduced during the year, with the only fully functioning Unit in Singapore. The Unit in Costa Rica was closed and most activities at the UK Unit have ceased. The Seed-Handling Unit in Singapore received and processed in 1992:

1041 seed samples of *Sesame* from Israel to Sri Lanka and India

1492 accessions of safflower from China to India

420 samples of wild forages from Vietnam and Thailand; these were sent to CIAT for multiplication/further distribution

1635 samples of okra and eggplant from India and Nepal

6 samples of various crops from Albania, maintained at VIR for repatriation.

In addition 310 accessions of food legumes from Burundi, 89 of cereal crops (Saudi Arabia), 315 of grasses and legumes (Yemen, including the Socotra islands), 240 of Solanaceae (Bangladesh) and 48 of safflower (China) collected in 1991 were distributed in 1992 to IBPGR-designated base and active centres.

In total the Unit received 4955 accessions and distributed 3966 accessions during the year. The Unit also assisted the Group in purchasing scientific equipment for the IBPGR/Vietnam training course on genebank management.

Ecogeographic and evolutionary studies in the Cucurbitaceae

Work by an IBPGR Research Associate based at the Instituto de Biología, Universidad Nacional Autónoma de México on four genera (*Cucurbita*, *Cyclanthera*, *Sechium* and *Sicana*) of economic importance in Latin America has come to an end with the preparation for publication of a monograph 'The Economic American Cucurbitaceae: Their Ecogeography and Genetic Resources'. We now have a clearer picture of the taxonomy, geographical distribution, ecological attributes and status of the genetic resources of the different cultigens and wild species of these four genera. The work will provide a starting point for conservation projects for the genera in the Americas. Bolivia, Colombia and Venezuela all expressed interest in using the information to increase germplasm collections and to make wider use of native genetic resources of cucurbits.

Studies on the breeding in *Phaseolus lunatus*

A special project on breeding systems of *Phaseolus lunatus* L. and its consequences for germplasm conservation started in June 1992. The University of Gembloux, Belgium, the University of Costa Rica and IBPGR are collaborating on the project, which is funded by the Belgian Government. The first part of this project has been the establishment of a database with accurate mapping of the different populations of the target species. Early work has also included fine-tuning of the electrophoretic methods that will be used to monitor genetic diversity in the different populations over several seasons and under different mating systems.

Diversity in *Phaseolus* and *Vigna*

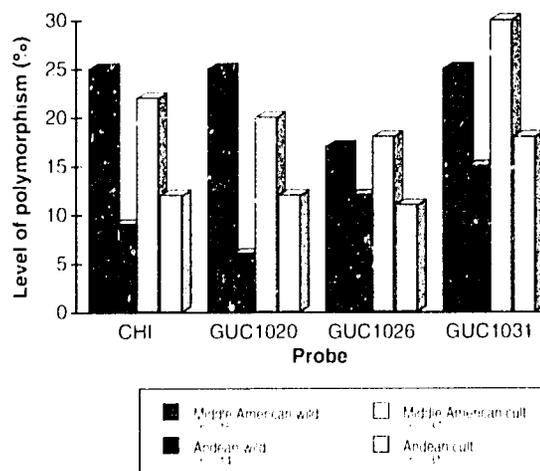
The project in collaboration with University of Davis, California, USA to identify DNA markers for *Phaseolus* and *Vigna* genetic resources was completed during 1992. The major objectives of this project were to identify variable and hypervariable DNA markers in *Phaseolus vulgaris* and *Vigna unguiculata*, to use these in a study of genetic resources of the two species and to explore the use of non-radioactive labelling methods for DNA markers.

Regions of the *P. vulgaris* genome detected by M13 minisatellite fingerprinting were mapped and map positions identified for three of the nine segregating bands detected by this probe. The fine structure and sequence of hyperpolymorphic sites was also investigated. Diversity patterns detected by the minisatellite sequences and by RFLP screening (using 14 probes and three restriction enzymes) was completed. As well as confirming the existence of the two major gene pools in *P. vulgaris* - middle American and Andean - the results obtained now provide sufficient information to be used in the definition of major diversity groups for the development of a core collection within the species (Fig. 6 below).

As noted in the 1991 Annual Report, the studies of diversity in *V. unguiculata* indicated that a severe genetic bottleneck occurred during the domestication of cowpea. A dendrogram of allozyme diversity was developed and showed that all cultivars studied, from Africa and elsewhere, are found in two groups that differ only at one enzyme locus (*Aat-2*).

The results obtained emphasize the potential value of the wild relatives of both *Phaseolus* and *Vigna* in breeding work to widen the genetic base of current cultivars. The results also provide a range of probes and techniques that can readily be applied by other workers wishing to identify the variation present in their material as part of a programme to identify those accessions that contain unique diversity of particular value.

Fig. 6. Comparison of polymorphism between wild and cultivated common bean



Effective pollination methods for regeneration

A project in collaboration with two German institutions (IPK, Gatersleben and FAL, Braunschweig) and funded by Germany started during 1992. The objective of the project is to investigate the effects of using different pollinating insects to multiply germplasm accessions from outpollinated crops. During the year accessions of carrot, onion, turnip rape and *Solanum phureja* were selected for use and isozyme studies to identify the markers required were also carried out. A number of candidate pollinators (*Bombus* spp., *Osmia rufa*, blowflies and flesh-flies) were raised and used in preliminary experiments with the accessions.

Workshop on core collections

A core collection is intended to contain with a minimum of repetitiveness as much as possible of the genetic diversity of a crop species and its wild relatives. It has been suggested that such a collection would contain about 10% of the total number of accessions of the target gene pool. For the last two to three years IBPGR has maintained a close interest in a number of projects throughout the world to develop core collections of plant genetic resources. As a result of the growing interest in the approach, IBPGR, in collaboration with CENARGEN, Brazil and CGN, the Netherlands, organized an international workshop at CENARGEN in Brasilia, Brazil in August to review progress in the development of core collections and to identify the major areas requiring further study. The organization of the workshop was assisted by donations from AIDAB, Australia, CTA, the Netherlands, Italy and the National Secretary for the Environment, Brazil.

In addition to Brazilian participants about 30 invited international participants attended the workshop, which discussed:

- methods of data analysis for developing core collections
- the use of different types of data for core collection development
- managing and testing core collections
- using the core collection

Working groups at the workshop also considered:

- core collections and the plant breeder
- the role of core collections in genebank management
- core collections and molecular genetics
- core collections in developing countries

During the final day the participants discussed the major research needs for core collection work. They identified a number of topics that should be given high priority, for example the development of core collections in a wider range of crop types (clonally propagated, cross-pollinated, etc.), the ways in which evaluation data and qualitative data (e.g. from isozymes) might best be combined, hierarchical structuring of diversity and the way in which a core collection approach might be used in assembling germplasm collections. The participants urged IBPGR to play a major role in initiating the necessary work.

Forest genetic resources

Following the organization of a Workshop on Forest Genetic Resources in 1991, IBPGR and CIFOR worked together to explore further the issues raised at the workshop. During 1992 two consultants did a study of the current status of research work on forest genetic resources to identify research priorities for the CGIAR. They also identified institutions that have the potential to undertake such work with particular reference to the role that should be played by CGIAR centres. A third consultant was responsible for investigating existing information management systems and developing an appropriate system for IBPGR that would build upon and complement the work of others. The results from these activities will provide the basis for further programme development and identification of the particular roles of the different CGIAR centres.

IBPGR's own programme of work on forest genetic resources also developed during 1992. A consultant addressed the particular information needs of the institute and the areas of programme development that should receive high priority. IBPGR's programme will be especially concerned with the needs of national forest genetic resources programmes. In addition collaboration between CGIAR institutions and the Forestry Resources Development branch of FAO was emphasized in programme development. Thanks to the support of the FAO staff, strong links have now been built that should ensure effective complementarity between the two organizations. During 1992 a new position for a forester was advertised and a candidate selected, who will begin work in 1993.



Germplasm Maintenance and Use Group

Introduction

The Group coordinates and implements research on strategies and technologies for *ex situ* conservation and use of plant genetic resources in conjunction with the Regional Groups. It encompasses the Institute's on-going research activities in seed conservation, *in vitro* technology and germplasm health and is widening the scope to work on the management of germplasm collections, and strategies for the conservation and use of germplasm, including the development of crop networks. The Group was involved in the organization and teaching for the short course on management of seed germplasm collections that was held in Vietnam (for further details, see p. 14).

During the year, there was considerable staff movement within the specialist areas covered by the Group, both within Headquarters and among the Regional Groups.

Global genetic resources

Genebank standards

An Expert Consultation on Genebank Standards was held at IBPGR in collaboration with FAO in May 1992 with several objectives. One was to refine international standards for genebanks to minimize the loss of genetic

Expert Consultation on Genebank Standards

standards to be submitted for endorsement by the Commission on Plant Genetic Resources, in April 1993

seed drying

preferred at 10-25 C and 10-15% relative humidity, using either a desiccant or drying chamber

seed storage conditions for base collections

acceptable standard: sub-zero temperature with 3-7% seed moisture content (depending on species)

preferred standard: -18 C or colder with 3-7% seed moisture content (depending on species)

seed storage conditions for active collections

storage conditions should ensure that the viability of accessions remains above 65% for 10-20 years

accession size of homogeneous material in base collections

acceptable: 1000 viable seeds within the accession

preferred: 1500-2000 viable seeds

viability monitoring

- initial germination tests should be carried out on a minimum of 200 randomly drawn seeds from the accession

- for each monitoring test 50-100 randomly drawn seeds should be used

- initial germination percentage should be higher than 85% for most seeds, but lower percentages are acceptable for some vegetables, wild and forest species

regeneration

should be undertaken when viability falls to 85% of the initial value:

it is desirable to use 100 plants or more.

integrity in seed accessions during storage and regeneration. Another objective was to provide standards that would apply to wild and forest species, in addition to crop species. The Consultation's final report will be submitted to the Fifth Session of the Commission on Plant Genetic Resources for endorsement and publication.

The International Network of Base Collections

Under the Memorandum of Understanding on Programme Cooperation between FAO and IBPGR, signed on 21 September 1990, FAO and IBPGR agreed to cooperate in merging, to the extent possible, the FAO International

Network of *Ex Situ* Base Collections of Plant Genetic Resources and the IBPGR Register of Base Collections. IBPGR will provide scientific and technical advice on establishing, maintaining and managing base collections. FAO will provide the policy and legal framework for countries to make the necessary commitments for the safe conservation and unrestricted exchange of germplasm.

During 1992 IBPGR and FAO continued discussions on developing the network further, the potential legal complications of the merger, the trusteeship concept and a modified basic agreement between FAO and the IARCs for their international germplasm collections.

Crop networks



Cocomit

IBPGR employed with financial support from ODA a consultant to build on the recommendations of the 1991 International Workshop on Coconut Genetic Resources. The consultant visited donors and scientists, and attended several conferences. His conclusions and recommendations constituted a working document presented to the first meeting of the Steering Committee of the Network, which was held in Singapore in December 1992.

CIRAD, France offered to host the International Coconut Database. The French Ministry of Technology and Space agreed to support the operations of this database in IRHO/CIRAD in Montpellier. A working session was convened in Montpellier, at which nine national programmes were re-presented. Passport data from several collections were collated and user-friendly software for passport data registration and management was presented at the Steering Committee meeting.



Cassava

Thirteen representatives from national programmes decided at the CIAT/IBPGR/IITA Workshop on Cassava Genetic Resources (CIAT, Cali, Colombia, August 1992) to launch an international network. The global network's strategy will be implemented regionally. CIAT, for Latin America and Asia, and IITA, for Africa,

agreed to serve as regional coordinators and to assume the Secretariat of the elected Steering Committee. The Committee will implement the recommendations of the workshop, link with existing cassava networks and seek funding.

Some recommendations for action International Cassava Network

- i) building up an international documentation system starting with the registration of basic passport data and 11 characterization criteria at regional level
- ii) supporting national programmes in the quantitative assessment of cyanide potential of tuberos roots and allezyme analyses
- iii) developing conservation methodologies such as *in vitro* slow growth and cryopreservation
- iv) sharing the workload for germplasm conservation
- v) increasing the capacity of regional testing laboratories to facilitate international exchange of cassava germplasm.



Barley

The Barley Core Collection Committee met in ICARDA, Aleppo, Syria in May 1992 and endorsed the approach of the previous European Barley Core Collection Task Force, i.e. hierarchical structure of the core, homozygous accessions and a total core not exceeding 2000 accessions. The International Barley Core Collection is planned to be compiled and available by 1995. A first division of the total barley diversity was agreed upon as well as the approximate sizes of the regional subgroups of the cultivar and landraces groups. Members of the Committee took responsibility for proposing lists of accessions from their regions following agreed selection criteria.

An international barley documentation system, as recommended by the International Barley Genetic Resources Network, was considered vital to collate information on accessions from the core collection and to ensure feedback from the users.



Beta

The *Beta* Coordinating Committee met in February 1992 in Brussels and had also two conference calls during the year to follow up on collaborative activities such as collecting missions and seed increase. The Committee also discussed topics such as extending the International *Beta* Database to characterization and evaluation data. The third meeting of the network was scheduled for Fargo, North Dakota, USA, in August 1993 with a special focus on pre-breeding activities.

Other activities

The Crop Network Coordinator assisted in developing the Andean plant genetic resources network and the WANA network (see pp. 10-12). A proposal to implement a sesame genetic resources network was presented at the Oilcrops Research Network Workshop convened by IDRC (Nairobi, 11-14 August 1992), which will be given further consideration. Technical assistance was provided at the Workshop on 'Conservation, Characterization and Utilization of Cocoa Genetic Resources in the 21st Century' (Port of Spain, Trinidad, September 1992) organized by the Cocoa Research Unit, University of West Indies, Trinidad. Preliminary work was done for the genetic resources session of the International Symposium on *Allium* for the Tropics to explore interest in establishing an *Allium* genetic resources network. A paper summarizing the conceptual framework and achievements of International Crop Genetic Resources Networks was presented at the 84th annual meeting of the Crop Science Society of America, Minneapolis, USA in September 1992.

Seed conservation research

Preservation of recalcitrant seeds

Many tropical species, such as fruits and timbers, produce recalcitrant seeds that cannot survive drying to low moisture contents. Therefore, they cannot

preserved at low temperatures. Maintaining genetic diversity in field banks is insecure and expensive. IBPGR is developing appropriate technology for long-term *ex situ* conservation of recalcitrant seeds. The Institute is also working to gain a better understanding

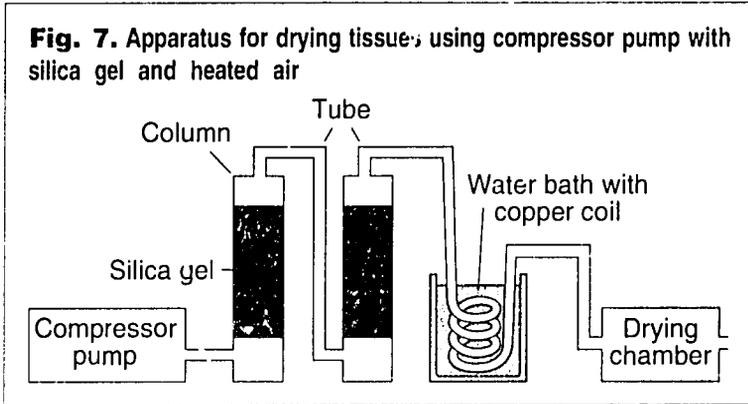
of the biological factors underlying recalcitrance. An IBPGR-funded project at the Universiti Pertanian Malaysia continued to produce encouraging results on preserving excised embryos of oil palm (*Elaeis guineensis*) and cacao (*Theobroma cacao*) in liquid nitrogen. The way excised embryos are dried to a predetermined moisture level is an important factor affecting their survival. A drying system involving a flow of compressed air passing through columns of silica gel followed by warming in a water bath with a copper coil significantly improves survival compared with slow drying in a laminar air flow cabinet (Fig. 7). 80% of the excised embryos survived when they were dried to 8.05% moisture content using air passed through columns of silica gel followed by warming in a 40°C coil. Drying to lower moisture contents was possible, but survival was reduced and stunted embryos were observed. Coil temperatures up to 70°C also showed potential and are being investigated further.

A collaborative project funded by ODA at IBPGR in India investigated biological mechanisms determining recalcitrance in seeds of tea, cacao and jackfruit. Immature embryo axes of cacao and jackfruit (*Artocarpus phyllus*) do not tolerate desiccation; partially matured axes are most sensitive to desiccation and freezing. Mature embryo axes with moisture contents below 14% did not survive freezing. Increased conductivity of leachates from the seeds and embryos and lipid peroxidation was observed with a decrease in moisture content, indicating damage to the cell membranes.

Non-destructive methods for seed viability determination

Assessing the viability of stored seeds requires a considerable number of seeds to produce reliable results, using up valuable stored germplasm. IBPGR is supporting research efforts that might lead to alternative viability determination methods, preferably using methods that are non-destructive.

Since 1990 IBPGR has supported a research project at the National Seed Storage Laboratory, Colorado State University, USA, to develop such non-destructive methods. Four different approaches were chosen, i.e. seed leachate conductivity studies, chemical analysis of seed leachates, seed germination studies and seed X-ray analyses. The seed leachate conductivity studies continued to show promising results, whereas X-ray analyses were found to be inadequate.



Ultradry seed storage

Maintaining seed germplasm in cold storage remains a major problem for many genebanks. Unreliable electricity supply, lack of refrigeration equipment, poor maintenance and high operating costs are some of the key problems. One possible solution that avoids the need for low temperature storage is to dry the seeds to low moisture contents, as low as 1 to 2%, and hermetically pack the dried seeds. At these ultradry levels, the seeds of a number of species have shown extended longevity even at ambient temperatures.

IBPGR continued to support several projects in this area to gain a better understanding of the effect of very low seed moisture content on seed longevity and on the genetic stability of seeds. A low-moisture-content limit to increase in longevity has been reported. This limit corresponds to seed moisture contents in equilibrium with 10-12% relative humidity at 20°C, and varies among species according to seed composition. The results obtained so far are very encouraging and need now to be translated into routinely applicable procedures for 'low-input' conservation conditions.

An IBPGR-supported Postgraduate Research Studentship at the University of Reading, UK showed that reducing the moisture content of barley seeds below a critical value does not further delay the buildup of chromosome aberrations during storage. The effects of moisture content on the induction of chromosomal aberrations and heritable mutations in stored barley seed, especially at low and very low moisture contents, was given

Fig. 8. Representative chromosome aberrations in surviving seeds as a result of storage

The photographs show chromosomes of root-tip cells of germinated barley seeds at anaphase during the first mitotic division. At top left is a normal dividing cell. The other photographs show chromosome damage that is a consequence of seed storage, as follows:

top right: single chromosomal fragment visible.

centre left: single chromosomal bridge visible.

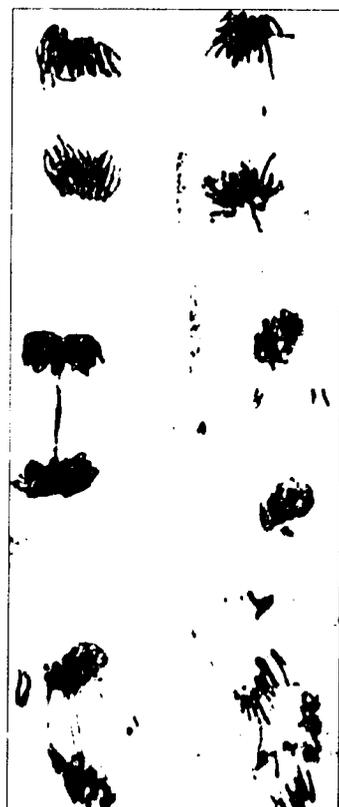
centre right: two double fragments visible.

bottom left: two double bridges and two double fragments.

bottom right: two double bridges, two double fragments and single fragments.



FAO



University of Reading

(courtesy Richard Ellis and Peng Yaojiu, University of Reading, UK)

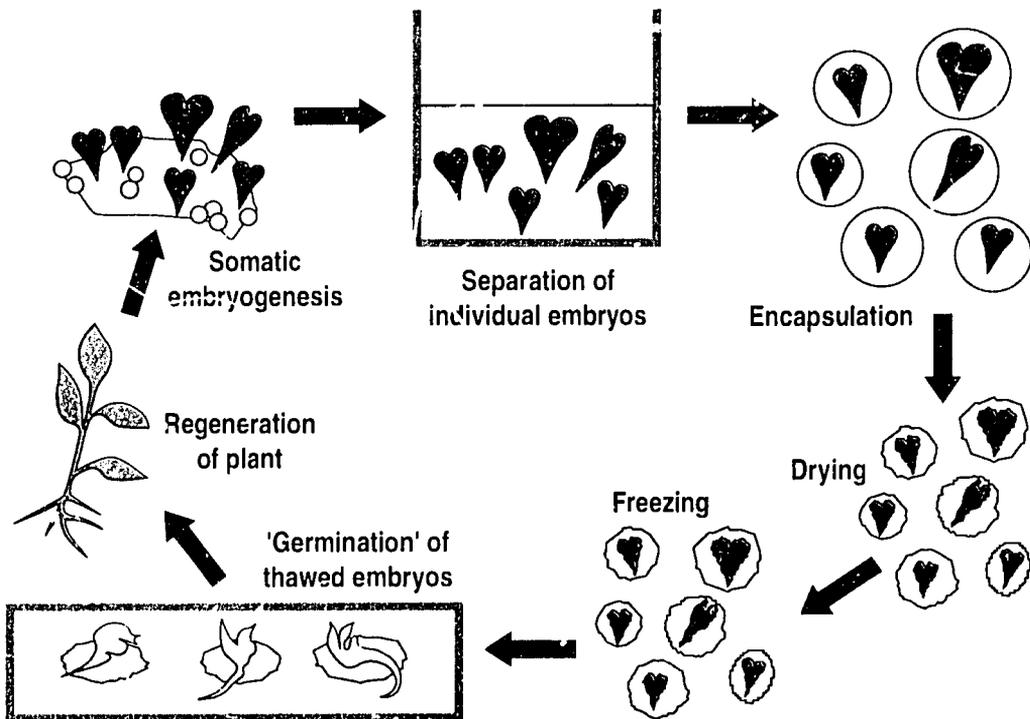
special attention (Fig. 8). The work found that, contrary to earlier research, the moisture content in stored seed did indeed influence the relationship between loss of viability and frequency of chromosome aberrations. For a given loss in viability, most chromosome aberrations accumulated at seed moisture contents of 5.8-8.6%. The frequencies of aberrations after storage at higher and lower moisture contents were lower for any given loss of viability. However, as found in earlier studies, seed storage induced heritable damage under any conditions in which loss of viability occurred. The conditions of storage did not affect the relationship between heritable damage and chromosomal aberrations induced during the storage period.

In vitro research

During 1992, IBPGR continued to support research aimed at improving medium- and long-term *in vitro* conservation technology for recalcitrant seed-producing and clonally propagated crops.

Mango (*Mangifera indica*) produces large recalcitrant seeds. IBPGR has been collaborating with the University of Florida, USA to develop an alternative approach to the field genebank to conserve this genus using *in vitro* storage of nucellar and somatic embryos. High concentrations of ABA (0.22-1.8 M) can temporarily stop the embryo developing. Osmotica such as mannitol at 10% can also inhibit growth. Embryos treated with such chemicals can withstand dehydration and rehydration. Dehydration can prevent undesirable 'vitrification' (hyperhydration) of embryo tissues. These studies bring into prospect an approach to the conservation of mango based on artificial seeds (see Fig. 9).

Fig. 9. How artificial seed technology could be used in plant genetic resources conservation



Cryopreservation of *in vitro* cultures of *Musa*
right: liquid nitrogen storage refrigerator
below: tubes of cultures being inserted into
controlled freezing apparatus

A. Adhelmour-Esquivel, CATIE



IBPGR has continued collaboration on refining cryopreservation methods for potato with DSM and FAL, both in Braunschweig, Germany, with the support of complementary funds from BMZ/GTZ (Germany). A wide range of cryopreservation techniques has been screened, drawing upon the numerous but inconsistent reports in the literature on the cryopreservation of potato and improved methods developed for other species. Droplet freezing has yielded the greatest success in this study, where shoot-tips cryoprotected with 15% DMSO are placed in a droplet of cryoprotectant solution on aluminium foil and plunged into liquid nitrogen. After rapid warming, the shoot-tips are enclosed in a droplet of solidified agarose such as used in artificial seed technology, surrounded by liquid medium, cultured and regenerated. This method has given regeneration levels of about 40% for more than half of the 25 varieties tested. Research is continuing to improve the reproducibility of the results, examining in particular the physiological state of the plant from which the shoot-tip is dissected, and to improve percentage recovery by manipulating post-thaw growth regulator treatments. In addition, the cryopreservation method will be tested on more varieties and histological studies done to determine the effects of cryopreservation on the structure of the shoot-tip.

Research at CATIE, Costa Rica concentrated on developing a cryopreservation method for somatic embryos of *Musa acuminata*. Various osmotic pretreatments, cryoprotectants and cooling and warming regimes were tested. The best results were obtained by pretreatment with 0.75% sucrose, cryoprotection with 0.75% sucrose and 5% DMSO for two hours at 5°C, cooling at 0.8°C min⁻¹ to -40°C, transfer to liquid nitrogen and rapid warming at +40°C. Recovery percentages are high (about 85%) but recovery always proceeds via callus formation. Furthermore, regeneration rates are

low. Research is continuing to refine the basic propagation procedure to improve performance at the recovery stage.

The medium-term *in vitro* conservation of *Musa* by slow growth is now routine and, as described above, long-term cryopreservation is in prospect. However, all *in vitro* procedures for *Musa* are hampered by the phenomenon of somaclonal variation which produces variant genotypes *in vitro* propagated material. IBPGR has collaborated in research to develop a molecular biological method, based on the technique of RAPD (random amplified polymorphic DNA, or 'rapids') to detect variants at an early stage.

1992 saw the completion of a pilot study into the development of a detection method for somaclonal variants. The research was supported by complementary funds from the British Government, and carried out at the University of Birmingham, UK, in collaboration with the INIBAP Transit Centre, Leuven, Belgium. An improved DNA extraction method and reaction mix for the polymerase chain reaction cycle, an essential stage of the process, were defined and a range of DNA primers screened. Suitable primers allowed a high degree of reproducibility in identifying and discriminating between varieties. More significantly, two primers have been identified which can discriminate between a certain parental type and its dwarf off-type. This pilot study has confirmed the potential of RAPD to identify *Musa* varieties, thereby aiding breeding programmes and bio-systematic studies. RAPD now also has the promise to be used to detect agronomically undesirable variants at a sufficiently early stage to prevent genetic erosion or drift in the genebank and economic loss to the farmer.

IBPGR has enjoyed a long and successful collaboration with CIAT in developing *in vitro* conservation techniques and management procedures for cassava germplasm. This collaboration culminated in a jointly sponsored training course held at CIAT in 1992, attended by scientists from Latin American national plant genetic resources programmes (see Fig. 10, p. 42 in the Training section).

During a visit to Vietnam in 1991, the potential for assisting the national programme by providing training in *in vitro* techniques was apparent. IBPGR subsequently funded the training of one scientist in the Philippines and mediated in the placement of another in Ireland.

Germplasm health

Safe movement of germplasm

The joint FAO/IBPGR programme to develop technical guidelines for the safe movement of germplasm finalized the drafts for two new additions to the series, sugarcane and coconut, which will be published in 1993.

A meeting to develop guidelines for small fruit germplasm hosted by the National Clonal Germplasm Repository was held in Corvallis, Oregon, USA, in collaboration with the Working Group for Virus Diseases of Small Fruits of the International Society for Horticultural Sciences.

Sugarcane field genebank
at the Kenya Plant Quar-
antine Station



L. deBorhegyi, IBPGR

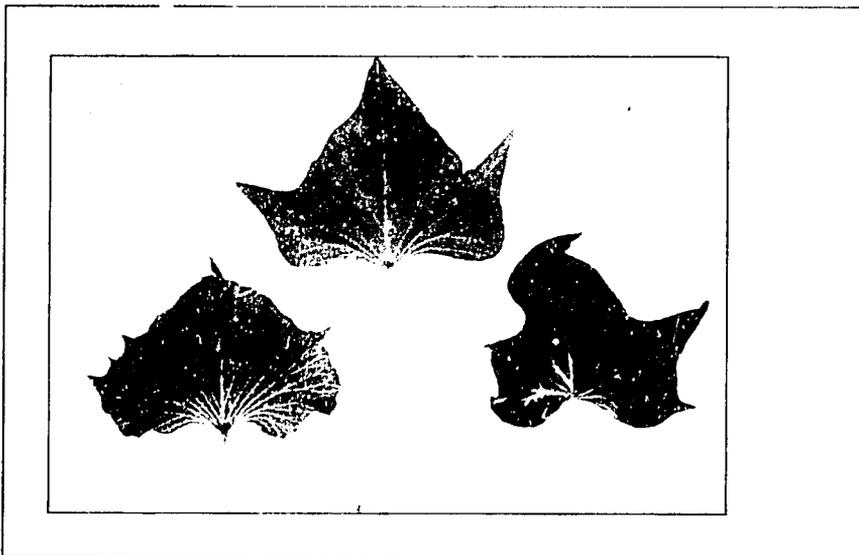
Rapid indexing for sweet potato viruses

The lack of a rapid and reliable indexing method for one of the causative agents of SPVD obstructs the international exchange of sweet potato germplasm. Previous investigations (1990-91) at the Vancouver Research Station determined the causative agents of the disease. A new closterovirus, SPCSV, which in mixed infection with SPFMV contributes to the disease, was characterized and its RNA genome reverse transcribed into cDNA and cloned in *Escherichia coli*. Four main activities took place in 1992: development of a detection assay for SPCSV; a field survey in Nigeria for SPCSV; genome sequencing; and training in molecular diagnostics.

Detection assay for SPCSV. Labelled probes made from specific SPCSV cDNA clones provided the basis for developing a rapid and reliable diagnostic method that is applicable in routine indexing programmes. A dot-blot hybridization assay was developed that uses ssRNA probes (riboprobes) labelled with the steroid hapten, digoxigenin-UTP, during transcription.

These labelled probes are subsequently detected by a serological test using an alkaline phosphatase-conjugated anti-digoxigenin antibody and a chemiluminescent substrate. The simplicity of sample processing allows the test to be completed in two days. The new test for SPCSV can replace the current time-consuming and unreliable practice of indexing for the virus in a bioassay using sweet potato clones pre-infected with SPFMV. SPCSV can be detected reliably by grafting suspect tissues onto *Ipomoea setosa*, which is the commonly used indicator plant in sweet potato virus diagnosis, followed by the serological assay of leaf material from the indicator plant.

The assay was used in collaboration with the USDA's National Plant Germplasm Quarantine Center, Beltsville, to test for SPCSV in sweet potato clones held under quarantine prior to their release for breeding purposes.



H. Rossel, IITA

Three types of symptom of SPVD on sweet potato caused by a complex of SPFMV and SPCSV

Sampling was done in Florida but the actual hybridization assay was performed at Vancouver. It is anticipated that the test will be performed at Beltsville in 1993. The cDNA clones for the preparation of riboprobes will be made available for anyone interested in sweet potato virus indexing.

Field survey for SPCSV in Nigeria. Samples of sweet potato were collected from farmers' fields in all areas of Nigeria where the crop is grown during a survey in September conducted in collaboration with IITA. Samples were also collected from the field germplasm collection of IITA as well as that of the Nigerian National Root Crops Institute. Samples were processed directly and the detection assay was performed at Vancouver. SPVD was found in almost every growing area and SPCSV was detected in sweet potato showing symptoms of the disease. However only one sweet potato variety seemed to be severely affected. Fields containing 70% SPVD infection were observed commonly when sweet potato was grown as a perennial crop.

Sequence analysis. Parts of the SPCSV genome were cloned and sequenced to identify the SPCSV coat protein gene. During the analysis it became evident that the genome of this new virus is either divided or that a second RNA virus is present in SPCSV-infected sweet potato. Experiments are under way to clarify the situation.

Training in molecular diagnostics. Dr J. Vega, Instituto Agr nomico, Sa  Paulo, Brazil went to Vancouver for a two-month training period. Starting with enriched virus preparations or infected potato leaves brought from Brazil, nucleic acid probes were generated and experience gained in non-radioactive hybridization assays. A strain of potato yellow mosaic virus infecting potato in Brazil was detected by a DNA-amplification procedure designed for the general detection of whitefly-transmitted geminiviruses. The double-stranded DNA product was subsequently cloned and a probe was generated to diagnose the virus.

Mr A. Alonge of the Biotechnology Unit in IITA received six weeks training. While making the field survey in Nigeria, Dr Stephen Winter demonstrated the techniques of molecular diagnostics in the Biotechnology Unit. A molecular probe for African cassava mosaic geminivirus was made using field material of cassava infected with the geminivirus. Use of the digoxigenin-labelled probe and chemiluminescent detection was demonstrated to the laboratory staff, where the assay is now used to test *in vitro* cassava cultures. Some work was also carried out with the banana strain of cucumber mosaic virus (CMV-B). Cloned DNA probes were generated that can be used for general CMV diagnosis, whereas clones representing sequences of CMV RNA 3 are used as highly specific probes for CMV-B.

Documentation, Information and Training

Introduction

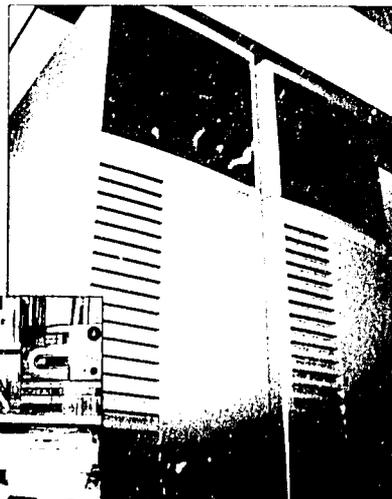
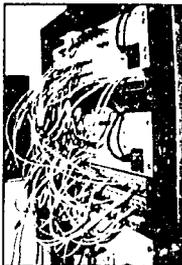
The establishment of the Documentation, Information and Training Group brought together staff with skills in several areas relating to the management and dissemination of information and technology transfer. The Group comprises staff responsible for Documentation Methodology and Application, Documentation Technology, Library and Bibliographic Services, Editorial and Publications, Public Awareness and Training. The Group acts as a focal point for these disciplines within IBPGR but liaises closely with Regional Groups where there are staff with complementary responsibilities.

Considerable progress has been made in improving IBPGR's capacity for handling and exchanging information, notably the installation of a local area network at Headquarters. A collaborative project with IDRC on the development of a self-teaching documentation guidebook neared completion in 1992. A collaborative activity with CABI came to fruition with the publication of the first three issues of Plant Genetic Resources Abstracts. IBPGR published a number of new titles and expanded its own capabilities to carry out desk-top publishing. 1992 was the year of UNCED. IBPGR was heavily involved in public awareness activities at both UNCED and the concurrent NGO Global Forum, representing the CGIAR system at both events. In the area of training, a significant development was seen in a move towards regionalization of postgraduate training to better meet the needs of national programmes.

Documentation programme

One of the most significant developments of 1992 was the expansion and reorganization of IBPGR's documentation programme. Documentation Methodology and Application, and Documentation Technology are staffed by one person each. This expansion will allow IBPGR to move closer to its objective of becoming a major genetic resources information centre.

Facilities



P. Stapleton, IBPGR

New information processing equipment has made a tremendous difference in efficiency of communications in both Headquarters and the Regional Offices. In 1992, a Novell local area network was installed at Headquarters, consisting of over 40 personal computers and two file servers. The system has Microsoft® Mail, WordPerfect® and IBPGR internal databases as network applications. In addition, work began on IBPGR's project administration system and its Platinum-based accounting software. Another significant development, called 'desk-to-desk' electronic mail, was

made possible by CGNET Services International, through a redesign of the CGNET electronic communications network into CGNET II. This allows a user on one LAN to communicate, through electronic mail, directly with a user on another LAN. Each mail message addressed to a specific user is routed directly to the receiving individual's mailbox.

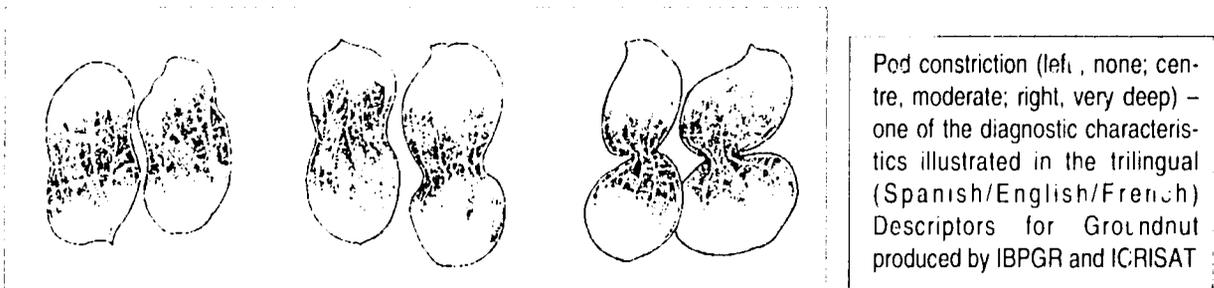
Germplasm characterization

Involvement in this area, in the light of strategic discussions, was focused to meet several goals. Characterization activities must result in detailed information on the variation in the collection. The techniques that are used should provide an accurate assessment of the genetic variation that the collection represents, as well as meet other objectives of the work. In cases of emergency, however, it still may be appropriate for IBPGR to support characterization trials together with multiplication of collections. For most crops, characterization trials will not be supported concurrently with regeneration of germplasm. These requirements allowed the support of one characterization trial of maize at NBPGR, India. In addition, IBPGR supported the Chinese Academy of Sciences to develop and publish a book on the characterization and utilization of safflower germplasm.

Development of standards for germplasm documentation

IBPGR continued developing and disseminating descriptor lists which provide an internationally accepted reference for data generation and exchange. All of IBPGR's current descriptor lists have been agreed upon by a group of international experts for the crop and have been compiled to provide the widest number of descriptors that will assist with the characterization of the crop. This approach, as opposed to the production of minimal descriptor lists, has been taken to provide standard descriptor definitions for as many descriptors as possible. The choice of descriptors that should be used for characterization is to be determined by the scientist carrying out the study.

In 1992, a descriptor list was published in English for white clover (*Trifolium repens*). Descriptors for groundnut (*Arachis hypogaea*) were published in English, French and Spanish, in conjunction with ICRISAT. Work progressed on walnut, yam (in conjunction with IITA), hop, *Capsicum*, avocado, buckwheat, chick pea (bilingual), pearl millet (bilingual), pigeonpea (bilingual), *Sorghum* (bilingual), (the last three in conjunction with ICRISAT, and chickpea in conjunction with ICRISAT and ICARDA). Work began on lists for *Piper*, arracacha (bilingual) and barley.



Systems for managing data

In 1992 IBPGR provided computer hardware to the Plant Breeding and Biological Department, Albania, CENARGEN, Brazil and the Vavilov Institute, Russia.

An outline was developed on an updatable 'Guidelines for data exchange'. This publication will provide guidelines on how genetic resources information can best be exchanged. It will cover a wide range of formats including databases, word processing, statistical packages and eventually graphics files.

From late 1990, IBPGR has been working on a cooperative project, jointly sponsored by IDRC, to produce a self-teaching 'Guidebook for Genetic Resources Documentation' and associated software. It will provide mechanisms to promote self-sustainability in documentation of genetic resources efforts, particularly at the national level. The project started with an in-depth analysis of the documentation processes at many genebanks and collaboration with many individuals. Throughout the project, the Genebank Section of the Bahtem Agricultural Research Station, Egypt, Universidad de San Carlos de Guatemala, Guatemala and the National Genebank of Kenya, Kenya participated actively. Three workshops were held in 1992 in Syria, Mexico and Kenya to test and refine the guidebook and software. The English version was completed in 1992. It will be printed in 1993 together with French and Spanish translations.

Information management and dissemination

Extensive work was done on the data used to produce IBPGR's 'Directories of Germplasm Collections'. The Tropical Fruits and Forages directories were sent to press at the end of 1992. IBPGR provided specific information to a great number of organizations and individuals, either in the form of data that already existed at IBPGR or as new information that had to be compiled.

Preparatory work was started on the redesign of IBPGR's internal databases to incorporate new data types, including parameters of genetic diversity, centres of diversity and local and indigenous knowledge.

The Documentation section devoted resources to a forest species genetic resources information project, initiated by ACIAR, that is described further below.

Geographic information systems

IBPGR has moved to a second stage in its work towards the objective of analyzing data using geographical information systems. Maps of the southern republics of the former USSR were digitized and collecting and herbarium specimen data overlaid on to them. This provided a simple visual



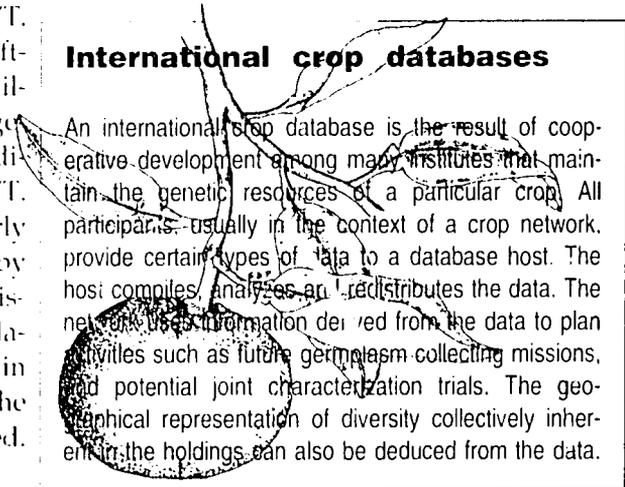
mechanism to compare the surveyed distribution of various *Vigna* species with the frequency of germplasm sample acquisition

International crop databases

Representatives from institutions housing coconut collections met in June 1992 and began work on a central database for coconut germplasm. Work progressed on the global barley database; a meeting is scheduled for documentation personnel for mid-1993. Work was completed on the Latin American maize database hosted by CIMMYT. All data were incorporated into the specific software written for this purpose and will be available, along with several other large maize genetic resources databases, on CD-ROM. In addition, these data can be requested from CIMMYT. Data compilation and standardization was nearly completed for the *Musa* database maintained by INIBAP. The software and the data will be distributed to some of the participants in the database project with a request for feedback in 1993. A regional *Citrus* database, hosted by the University of Malaya, Malaysia was completed.

International crop databases

An international crop database is the result of cooperative development among many institutes that maintain the genetic resources of a particular crop. All participants, usually in the context of a crop network, provide certain types of data to a database host. The host compiles, analyzes and redistributes the data. The network uses information derived from the data to plan activities such as future germplasm collecting missions, and potential joint characterization trials. The geographical representation of diversity collectively inherent in the holdings can also be deduced from the data.



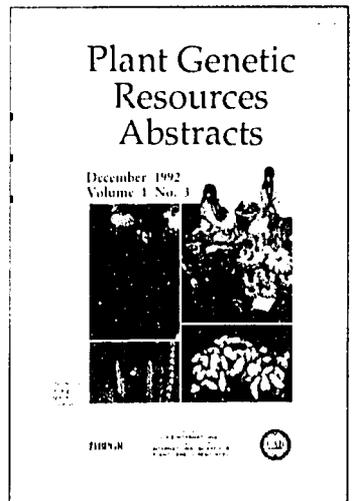
Library

The objective of the Library is to provide a comprehensive information service to IBPGR and the plant genetic resources community. The Library supports IBPGR projects by providing literature-based information, primary documents and bibliographic data. It has now built up a small collection of books, journals and CD-ROMs to address the immediate needs of IBPGR staff and others. Current awareness tools, a bibliographic research service, document supply and reference services are offered by the Library.

Over 100 new books were acquired in 1992. The Library subscribed to over 50 journal titles and received others on exchange. It has a collection of six agricultural databases on CD-ROM. The Library satisfied approximately 400 photocopy requests from IBPGR staff and 80 external requests.

In 1992 work was started on compiling a bibliographic database of IBPGR internal reports from 1974 to date. This database will be brought up to date in 1993 and will facilitate the retrieval of information on past IBPGR activities.

June 1992 saw the first issue of a new quarterly abstracts journal - 'Plant Genetic Resources Abstracts' - a product of collaboration between CAB International and IBPGR. The journal is derived from the larger CAB ABSTRACTS database. Items selected for 'Plant Genetic Resources Abstracts' are classified and indexed by the CAB International Department of Plant Breeding and Genetics in consultation with IBPGR. Funds for publication are provided by IBPGR. The journal publishes over 2500 abstracts each year and covers all areas of plant genetic resources. IBPGR distributes copies of the journal to selected users in developing-country national programmes.



Editorial and Publications

IBPGR continued to produce new titles during 1992 and distribute large numbers of its backlist. During the year, a variety of new titles were published (see next page). In the early part of the year, a lot of effort was put into developing and despatching material in preparation for UNCED, especially the CGIAR Fact Sheets (see p.43). *Geneflow* was produced for the first time in three languages, English, Spanish and Portuguese, for distribution at UNCED.

A new periodical was initiated in 1992, called '*pgr*'. It is an informal news sheet directed specifically at donors and policymakers to inform them of important programme, technical and organizational developments in IBPGR. '*pgr*' will begin regular two-monthly production in 1993.

In line with current policy, fewer copies of each IBPGR title were printed, and greater attention was paid to targeting accurately the initial bulk distribution of new publications. In total, almost 60 000 copies of more than 20

titles were printed. Existing material was distributed more selectively in response to individual requests.

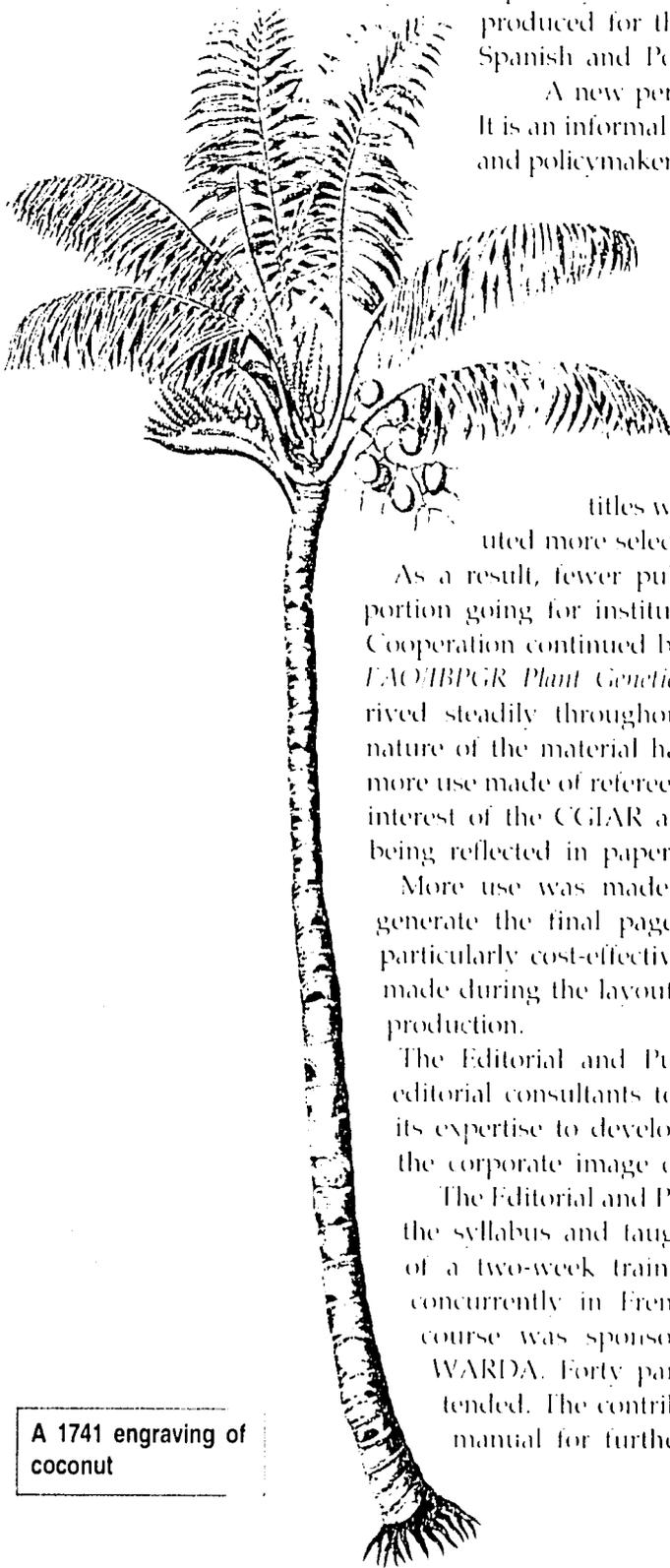
As a result, fewer publications were sent, with a larger proportion going for institutional use.

Cooperation continued between FAO and IBPGR to produce the *FAO/IBPGR Plant Genetic Resources Newsletter*. Contributions arrived steadily throughout the year. The increasingly technical nature of the material has meant more detailed reviewing, with more use made of referees outside IBPGR and FAO. The increased interest of the CGIAR and IBPGR in forest genetic resources is being reflected in papers accepted for the Newsletter.

More use was made of desk-top publishing technology to generate the final pages of the Newsletter in house. This is particularly cost-effective, because expert editorial input can be made during the layout, page-proofing and correcting stages of production.

The Editorial and Publications Unit supplied a number of editorial consultants to work on IBPGR projects, and applied its expertise to developing IBPGR's strategy and to designing the corporate image of the new Institute.

The Editorial and Publications Manager assisted in planning the syllabus and taught for a week on the English segment of a two-week training course on scientific writing given concurrently in French and English in Côte d'Ivoire. The course was sponsored by AASE, CTA, SAFCRAD and WARDA. Forty participants from all over West Africa attended. The contributions will form the basis of a training manual for further courses in the region.



A 1741 engraving of
coconut

IBPGR publications produced in 1992

General

Annual Report 1991
'pgr1'

Newsletters

FAO/IBPGR Plant Genetic Resources Newsletter
Nos. 86, 87, 88/89
IBPGR Newsletter for Asia and the Pacific No. 8
February 1992 and No. 9 June 1992
IBPGR Newsletter for East Asia

Research

Free radical damage in stored plant germplasm
(reprint)
ATSAF/IBPGR Genetic diversity and crop strategies
for roots and tubers
CABI/IBPGR Plant Genetic Resources Abstracts
IBPGR/IUCN/WWF/BRG La conservation des plantes
sauvages apparentées aux plantes cultivées
IBPGR/IUCN/WWF/EMBRAPA/CENARGEN
Conservação dos Parentes Silvestres das Plantas
Cultivadas
IBPGR/IUCN/WWF/USFWS/CI Conservando los
Parentes Silvestres de las Plantas Cultivadas

Characterization and documentation

Descriptors for White Clover (*Trifolium repens* L.)
Descriptors for Groundnut (*Arachis hypogaea*)

Crop Networks

International Crop Network Series
5. Okra Genetic Resources
6. Buckwheat Genetic Resources in East Asia
7. International *Beta* Genetic Resources Network
8. Coconut Genetic Resources
9. Barley Genetic Resources

ECP/GR

Report of a Working Group on Sunflower
Report of a Working Group on *Allium*

Public Awareness

Geneflow IV (english)
Geneflow IV (spanish)
Geneflow IV (portuguese)
Partners in Conservation, 2nd edition
CGIAR Fact Sheets - Biodiversity and plant genetic re-
sources

Posters

Crop genetic resources networks
Complementary conservation methods for plant genetic re-
sources
IBPGR/RAFI People and plants - the development coalition

Training

During 1992, IBPGR continued to support both group and individual training activities, focused on the needs of national programmes. In addition, work began to implement a strategic change towards regionalizing higher degree training by building capacity in developing-country training institutes.

Group training

MSc degree courses

With the assistance of UNEP, IBPGR continued to provide fellowships to developing-country scientists to attend the MSc Course on Conservation and Use of Plant Genetic Resources at the University of Birmingham, UK. In the academic year 1991/1992, two fellowships were awarded to scientists from Argentina and Kenya. In 1992/1993, four fellowships were granted to scientists from Cambodia, Madagascar, Nepal and Vietnam. IBPGR contributed to teaching in the area of *in vitro* conservation and conservation strategies in both the Birmingham course and an Agronomy MSc course at the University of Nottingham.

Over recent years, IBPGR has recognized that to meet the demand for higher degree training in an appropriate and cost effective way, training capacity should be built up within developing countries themselves and importantly, in languages other than English. To this end, IBPGR has, during 1992, discussed with a number of training institutes the development of a regionalized programme of higher degree opportunities. Initially, discussions have been held with institutes in Sub-Saharan Africa and Latin America. One important aspect of this programme will be to draw on existing developed country expertise including that at the University of Birmingham with which IBPGR has had a long and successful collaboration in training activities.

Short specialized technical courses

IBPGR helped organize six short courses during 1992. Two of these were located in Colombia, the others in Israel, Nigeria, PDR Korea and Vietnam. All of the courses involved close collaboration with national, regional or international institutes and two were collaborative activities with sister CGIAR centres, CIAT and IITA. The latter was also in collaboration with FAO. Further details of the courses, including subject coverage and origins of participants are given in Fig. 10 and in the reports of the relevant Regional Groups.

IBPGR staff contributed to the teaching of four other international training courses, in Côte d'Ivoire, Zimbabwe, Japan and the USA.

Fig. 10.
Training activities and countries supported in 1992 (highlighted areas)

Individual

- 1. place: USA; subject: molecular biology techniques; participant: Kenya
- 2*. place: Ethiopia; subject: genebank management; participants: Botswana, Kenya, Malawi, Namibia, Tanzania and Zimbabwe
- 3. place: India; subject: orthodox seed conservation; participants: Nepal, Bhutan
- 4. place: India; subject: plant characterization/evaluation; participants: Bangladesh, Maldives
- 5*. place: Ireland; subject: *in vitro* conservation; participant: Vietnam
- 6. place: the Philippines; subject: *in vitro* conservation; participant: Vietnam

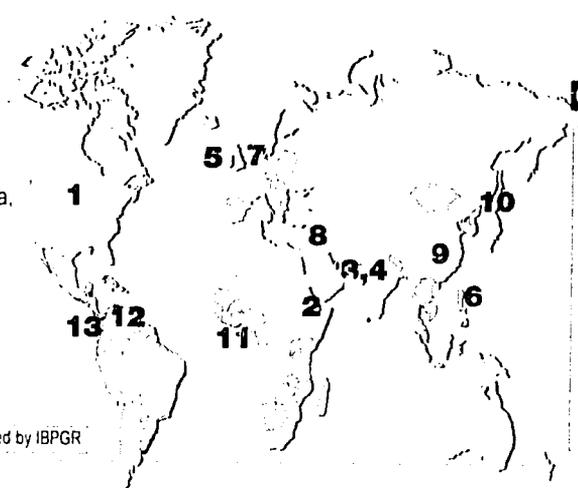
Group

- 7. place: Univ. Birmingham, UK; subject: MSc, conservation and use of plant genetic resources; sponsorship: (91/92) 2 participants - Argentina & Kenya; (92/93) 4 participants - Cambodia, Madagascar, Nepal and Vietnam

*coordinated by IBPGR

Short courses

- 8. Israel/Hebrew University - 5th International Course on Exploration of Wild Genetic Resources: Principles of Collecting and Sampling; 10 participants from: Bulgaria (1); Cameroon (2); Czechoslovakia (1); Hungary (1); Kenya (1); Mexico (1); Poland (1); Spain (1); Thailand (1)
- 9. Vietnam/INSA - Management of Germplasm Seed Collections: 22 participants from: Vietnam (14); Cambodia (4); Laos (3); the Philippines (1)
- 10. DPR Korea/PGRI - Conservation and Utilization of Plant Genetic Resources; 43 participants from: DPR Korea (40); Mongolia (3)
- 11. Nigeria/IITA/FAO - Plant Genetic Resources Collection, Utilization and Management; 14 participants from: Benin (2); Burkina Faso (1); Côte d'Ivoire (1); Lesotho (1); Mali (1); Nigeria (2); Rwanda (1); Sierra Leone (2); Tanzania (2); Uganda (1)
- 12. Colombia/CIAT - *In Vitro* Germplasm Management; 15 participants from: Bolivia (1); Brazil (1); Colombia (3); Cuba (1); Ecuador (1); El Salvador (1); Guatemala (1); Honduras (1); Nicaragua (1); Panama (1); Peru (1); Uruguay (1); Venezuela (1)
- 13. Colombia/National University, Palmira - Plant Genetic Resources; 16 participants from: Bolivia (2); Colombia (9); Ecuador (2); Peru (2); Venezuela (1)



Individual training

IBPGR has used the opportunity of individual training activities to give specialized instruction to national programme staff. A Kenyan scientist was supported to visit the University of Missouri, USA to study molecular biology techniques. A scientist from Bhutan and one from Nepal were trained in the conservation of orthodox seeds at NBPGR, India. At the same institute, one scientist each from Bangladesh and Maldives was trained in the characterization and evaluation of plant germplasm collections. One Vietnamese scientist was funded by IBPGR to train in *in vitro* conservation techniques at the University of the Philippines at Los Baños, and IBPGR coordinated the training of another Vietnamese scientist in this same area in Ireland. IBPGR also facilitated the training of six scientists from Kenya, Tanzania, Zambia, Botswana, Namibia and Malawi at ILCA in genebank management techniques.

During 1992, IBPGR negotiated support for individual training with the Government of Italy. As a result, it will be possible to offer short, special skills training and more extended research fellowships in Italian research institutes to developing-country scientists during 1993.

Public awareness

The main focus of IBPGR's public awareness activities in 1992 was the United Nations Conference on Environment and Development. IBPGR represented the CGIAR system in the areas of public awareness and biodiversity. IBPGR's biodiversity initiatives for UNCED are covered elsewhere in this report (see p. 49); public awareness activities are summarized below.

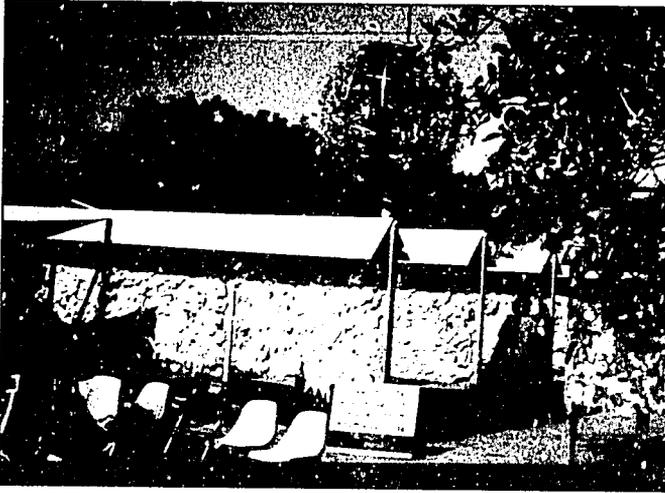
An IBPGR UNCED Task Force prepared a series of ten Fact Sheets on issues relevant to biodiversity and plant genetic resources. These took the form of simple non-technical summaries of key points and covered a range of topics. The Fact Sheets were completed well before UNCED and distributed to donors, policymakers and journalists.

IBPGR also prepared public awareness material for distribution at the Earth Summit itself: a special issue of 'Geneflow' focusing on biodiversity was produced in English, Spanish and Portuguese. The booklet 'Partners in Conservation: Plant Genetic Resources and the CGIAR System' was updated and released at UNCED. Three posters highlighted genetic resources activities, one produced in collaboration with a Canada-based non-governmental organization, the Rural Advancement Foundation International.

IBPGR organized exhibition booths at both Rio Centro and at the Global Forum from which over 8000 publications and 6000 posters were distributed. Delegation members received hundreds of visitors and representatives of key target audiences and had useful discussions with NGO representatives and journalists. Two topics were raised: the position of



R. Raymond, IBPGR



Tree of life –
the symbol of
the NGO Global
Forum

the CGIAR centres on intellectual property protection and the effects that the Convention on Biological Diversity is likely to have on the free exchange of germplasm. IBPGR's presence at the Conference helped to familiarize many participants with the Institute and with the fact that resource conservation and sustainable development are inextricably linked. Two CGIAR press briefings were held, at the Global Forum and at Rio Centro, attracting several hundred journalists.

The Executive Committee of the CGIAR Public Awareness Association

met shortly after UNCED and decided that the CGIAR system should be more vigilant in identifying opportunities for joint public awareness work. IBPGR was asked to continue its representation of the CGIAR system in all follow-up activities to the Conference.

Other 1992 activities of the Public Awareness Office included the development of a 'press kit', containing information on IBPGR and its work and biodata of all staff, and the preparation of exhibits for International Centers Week, the International Conference on Medicinal Plants and the FAO/WHO International Conference on Nutrition. Press briefings were held in Rome concerning the CGIAR response to the Convention on Biological Diversity. IBPGR co-sponsored (with DGIS) a video, 'Treasures of Ethiopia', on the subject of genetic resources conservation in that country and developed an audio-visual presentation describing IBPGR's work.

The Public Awareness Office continued to support the centre in the area of donor relations in 1992, through the preparation of slides and presentations for use on donor visits. Supporting activities involved updating the database of IBPGR's photolibrary and of the media and NGO mailing lists.

F. Botts, FAC



Workers discuss crop of improved red sorghum at the Plant Genetic Resources Centre, Addis Ababa, Ethiopia

Collaborative activities

CGIAR/IARCs

Strategy on plant genetic resources

With the development of new CGIAR priorities and strategies, and after discussions in TAC, IBPGR was asked to prepare a discussion paper on a common CGIAR strategy for plant genetic resources. A first draft was discussed by IBPGR's Board of Trustees and a revised version presented to a workshop on intellectual property rights and plant genetic resources in early 1992 at IBPGR Headquarters. A further version was tabled during the TAC meeting at Aleppo, Syria in March, and at the Centre Directors meeting in Nairobi, Kenya.

The ecoregional approach to research by the CGIAR has been widely accepted. This concept was used as the basis for the proposed CGIAR strategy. Because of this, TAC requested a description of the key elements of the strategy that would influence the medium-term plans being prepared by the Centres. In response, IBPGR surveyed the Centres and wrote another paper for TAC that was discussed during the TAC meeting prior to International Centres Week in Washington, October 1992.

Proposals for a common CGIAR strategy for plant genetic resources

The most important elements of the proposed strategy are:

- to strengthen and expand the role of the CGIAR system in the global effort on the conservation and use of plant genetic resources to provide a better security basis for the resources conserved worldwide;
- to use the ecoregional approach to increase the involvement of the commodity centres in crops of regional or local importance; and
- to reinforce coordination within the CGIAR system on conservation, use, research and training in plant genetic resources.

Task Force for Safety Duplication

This IBPGR Task Force produced in 1992 a summary of the results from a questionnaire sent to all Centres on duplication of their collections. About half of the germplasm accessions maintained by the CGIAR Centres are now duplicated, in some manner, in another institute. Duplication varies from an 'active' type (the germplasm is incorporated into the recipient's active germplasm collection) to 'base' (the germplasm is maintained in the recipient's base collection) and 'black-box' (the recipient simply keeps the germplasm, boxed up, under long-term storage conditions) types. All Centres are committed to work systematically towards the safety duplication of the entire collections they maintain in their genebanks.

Intellectual property protection

During 1992 IBPGR was involved in discussions on intellectual property protection. It hosted the CGIAR Workshop on Intellectual Property Protection, Biosafety and Plant Genetic Resources at Headquarters early in 1992, during which a draft statement was agreed upon for further discussions within the CGIAR system and with partners. The draft built on the 1989 'CGIAR Policy on Plant Genetic Resources', which regards the prin-

ciple of unrestricted availability of the germplasm it holds in trust in its genebanks as the most important aspect.

The 1992 draft statement reflected the guiding principles that had been discussed and agreed upon by the Centre Directors. The draft establishes the framework on which to build a CGIAR policy on intellectual property protection, biosafety and plant genetic resources. It also describes the main activities supported by the CGIAR in the conservation of plant genetic resources to explain the policy elements and to illustrate their relevance to the broader areas of biodiversity. IBPGR played an active role in the planning of a consultation process with NGOs and participated in two meetings in Latin America and southeast Asia.

A report was commissioned on the legal status of the germplasm collections at the IARCs that consolidated the concept of trusteeship. This concept allows for the germplasm collections to be held and managed by the Centres on behalf of beneficiaries, the worldwide community, but especially the developing countries. This implies a management responsibility to defend the material against physical destruction and misappropriation, as well as adequately maintain the germplasm. The latter responsibility obligates the Centres to duplicate the collections to ensure their security. Subsequently, IBPGR, in close consultation with the other CGIAR Centres, undertook to bring the IARC collections under the legal umbrella of FAO, and prepared a draft legal agreement to that end.

FAO

In September 1990, FAO and IBPGR signed a Memorandum of Understanding on Programme Cooperation. The memorandum will remain valid once IPGRI takes over the functions of IBPGR. It established full complementarity of function between FAO and IBPGR, avoiding duplication of effort and ensuring effective cooperation in joint activities for mutual benefit, and for the ultimate benefit of all countries, with particular reference to developing nations. FAO has a constitutional responsibility to provide technical assistance to its member nations in the area of plant genetic resources. IBPGR and FAO have cooperated in formulating projects for technical assistance and in providing consultancy services to implement field projects. Advice has also been given on establishing conservation facilities in various countries. Details of assistance to specific national programmes can be found in the descriptions of the activities of the Regional Groups given earlier.

Two joint FAO/IBPGR programme planning meetings were held in 1992. In addition, the subcommittees on specific areas of collaboration, e.g. information, conservation and publishing, met during the year. The following is a summary of 1992 joint activities.

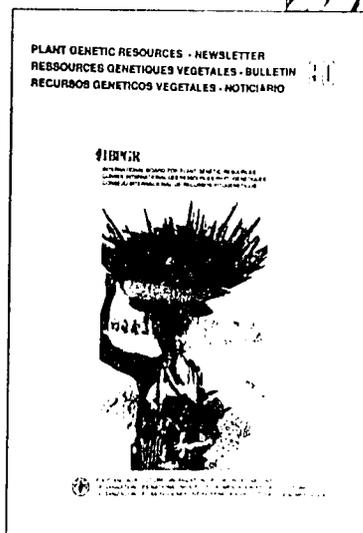
Security of collections

A joint FAO/IBPGR mission visited six countries in central and eastern Europe during June/July 1992 (see Fig. 5, p. 18) to identify possible danger to the germplasm collections stored in the national genebanks. The mission reported that in the past (until 1990-9!) in general, the national programmes

A Namibian farmer in front of his harvest holding large, compact heads of pearl millet he has selected for seed (from FAO/IBPGR Plant Genetic Resources Newsletter (1992) 90:42-45).



S. APPA HAO



Publications

FAO and IBPGR have continued to publish the quarterly FAO/IBPGR Plant Genetic Resources Newsletter, under the guidance of a joint Editorial Committee (see p. 40).

Forest genetic resources

FAO's Forestry Department has collaborated intensively with IBPGR in the area of forest genetic resources. Consultations continued on the expansion of IBPGR's activities in this area, in particular in the development of a research agenda and a database on forest genetic resources.

NGOs

IBPGR increased its efforts to forge collaborative links with NGOs in 1992. In October, representatives from IBPGR and a number of African NGOs met in Nairobi to exchange information on their activities and to identify potential areas of collaboration in plant genetic resources conservation. An Interim Committee was established with the following objectives:

- to organize national and regional meetings to collect and compile information on African NGOs involved in plant genetic resources;
- to identify possible strategies for collaboration between IBPGR and African NGOs;
- to initiate collaborative activities, especially in the areas of information exchange and development of links between African NGOs.

As a first task, the Interim Committee will produce a continental directory and database of African NGOs working in the field of plant genetic resources. The NGO Directory is expected to be completed by mid-1993.

The CGIAR started a consultation process between its centres and NGOs interested in intellectual property rights, biosafety and plant genetic resources. The consultation also included possibilities for increasing tech-

of genetic resources had been comparatively well funded, and good links had existed between national genebanks and crop breeding programmes. Following the political changes, the support for agricultural research in most of the countries visited, and for genetic resources work in particular, has been drastically reduced in terms of staffing and funding. In some cases, there has been a tendency to privatize agricultural research with a negative impact on the continuation of funding for genebank activities. This has endangered the germplasm collections held by the national institutions. In late 1992, a project was initiated to provide assistance to the national programmes in central and eastern Europe (see Fig. 5, p. 18 for details).

Training

FAO and IBPGR are developing their training programmes in full consultation and cooperation. IBPGR organized a number of training courses, details of which can be found on pp. 41-42. FAO, IBPGR and IITA held a joint training course on 'Conservation and Utilization of Plant Genetic Resources' at IITA in Ibadan, Nigeria, September/October 1992.

Guidelines for the safe movement of germplasm

FAO and IBPGR have agreed to develop a cooperative programme aimed at facilitating the safe and expeditious transfer of germplasm. One element of this approach is the preparation of a series of crop-specific protocols and guidelines. The guidelines describe disease indexing and other procedures for use by quarantine officials and scientists involved in the exchange of plant germplasm. Several were finalized during the year (see p. 33).

Information subcommittee

IBPGR collaborated with FAO on a joint Subcommittee for Plant Genetic Resources Information. The main activity in 1992 of this subcommittee was the finalization and despatch of a survey form to all FAO member countries on the structure, holdings and operations of national plant genetic resources programmes. There was also direct collaboration with FAO information personnel to design a methodology to process and follow-up on this survey form. A second survey form was also sent to about 50 institutes to seek information on plant genetic resources information systems.

Conservation subcommittee

Another subcommittee is devoted to aspects of plant genetic resources conservation. FAO and IBPGR are working towards merging their networks of base collections. The recommendations on genebank standards of the joint FAO/IBPGR Expert Consultation in May will be sent for endorsement by the Commission (see p. 20). FAO and IBPGR also continued to investigate the establishment of the Svalbard International Seedbank, an additional security seed storage in the permafrost. The Government of Norway has offered to finance the establishment of the seedbank and FAO and IBPGR are investigating a financial mechanism to cover the annual operating costs. In late 1992, FAO and IBPGR employed a consultancy firm to investigate further funding possibilities.

nical cooperation. The first consultation meeting was held at CIAT with the participation of CIAT, CIMMYT, IBPGR, the CGIAR Secretariat and a good representation of the different NGOs in the Americas. The four-day meeting had a strong focus on intellectual property rights but did not result in a clear understanding on some key matters. However, the meeting agreed on an impressive list of areas for possible future cooperation in the Americas.

To facilitate the consultation process between the CGIAR and NGOs, a meeting was held in Canada to discuss the precise objectives of the consultations and to improve communications between the two groups. The following 'Statement of Purpose' was agreed upon: "To promote and strengthen the sustainable management and use of natural resources at the community, national and regional/international levels, involving NGOs, NARS and IARCs".

Two specific objectives were developed for the consultation process between NGOs and IARCs:

- 1) To explore areas of comparative advantage for the NGOs, NARS and CGIAR centres through:
 - a) analysis of respective roles, policies and programmes, and of the context within which they occur;
 - b) preparation and dissemination of information material;
 - c) dialogues.
- 2) To establish collaborative activities for improved development impact.

In October 1992, 'Premières rencontres Méditerranéennes sur le patrimoine génétique domestique et les savoirs populaires' were held in Monosque, France. The meeting, organized by PAGE-PACA with inputs from other European NGOs, sought to form a Mediterranean network of plant genetic resources organizations drawn from the formal and informal sectors. IBPGR made a financial contribution to the meeting together with local, regional and national authorities, as a means to support collaboration between the formal and informal sectors. The meeting was attended by participants from 10 Mediterranean countries.

In November 1992 a group of NGOs based in the Philippines organized a three-day 'Dialogue on Rice, Food Security and Ecology'. NGOs, mainly from Southeast Asia, IBPGR, ICLARM and IRRI, as well as representatives of the Dag Hammarskjold Foundation, discussed matters of mutual interest related to rice genetic resources, including conservation and use as well as broader issues of agricultural research, such as intellectual property rights and low input versus high input agriculture. Despite differences of opinion, the group had a strong will to agree on the declarations of the meeting's working groups. Concrete areas for cooperation were also discussed and agreed upon.

UNCED

IBPGR's involvement in the Earth Summit dates back to November 1990, when the institute was asked to become a member of the Biodiversity

Working Group, the group responsible for assisting the UNCED Secretariat's preparation of biodiversity items for the conference agenda. Thereafter, IBPGR was requested by the CGIAR Centre Directors and the Public Awareness Association to represent the system at UNCED in plant biodiversity and genetic resources issues and in the area of public awareness (see the Public Awareness section on pp. 43-44). In these capacities, Headquarters staff participated in the Third and Fourth Preparatory Committee meetings leading up to the conference. Staff of the Sub-Saharan Africa Regional Office were involved in the 6th and 7th Sessions of the Intergovernmental Negotiating Committee for a Convention on Biological Diversity, in Nairobi.

A delegation from IBPGR attended the Earth Summit with the status of an 'International Organization'. This allowed the delegation to sit as an observer of the formal diplomatic meetings.

The NGO Global Forum, which took place in Rio concurrently with UNCED, was conceived as part of the overall UNCED process: the General Assembly's concern that the Earth Summit include broad as well as high level participation guaranteed that the 'informal sector' would play a more active role than ever before in a major UN conference. NGOs participated in the four Preparatory Committee meetings over the two years that led up to UNCED. At Rio itself the NGOs showed themselves to be key partners for the formal sector.



R. Raymond, IBPGR

CGIAR press
conference at
NGO Global
Forum

Since the conference, IBPGR has analyzed the potential implications of the Convention on Biological Diversity for international collaboration in plant genetic resources. While the Convention covers all areas of biological diversity, it includes specific provisions for the conservation and exchange of genetic resources and promotes the sharing of technologies and benefits from the exploitation of genetic resources for sustainable development. It recognizes the central importance of national genetic resources systems and places an obligation upon signatories to integrate the conservation and sustainable use of biological resources into national decision-making.

IPGRI's Strategy is fully in line with this. It starts from the premise that national programmes are the foundation of any global genetic resources conservation effort.

A crucial feature of the Convention requires contracting parties to facilitate access to genetic resources, whilst recognizing national sovereignty and proscribes the imposition of restrictions that run counter to the objectives of the Convention. This concept of open access to plant genetic resources, coupled with an equitable sharing of the benefits, is of key importance to achieving IBPGR/IPGRI's strategic objectives. IBPGR set up an UNCED Liaison Group in October to continue to monitor events arising from the conference. The group will acquire and disseminate information on the development and implementation of the Convention and Agenda 21, analyze issues and trends and monitor funding opportunities.

Office of the Director

IBPGR/IPGRI Trustees

The full Board of IBPGR met once in 1992 in Rome (22-24 January). The IBPGR Executive Committee met three times: in Rome on 21 January and 22-23 April, and 31 October/1 November in Washington DC, USA. The 15th meeting of the Programme Committee also took place in Rome (20 January). The 16th meeting was held in CIMMYT, Mexico from 31 August to 3 September. The Nominations Committee met once in Rome on 21 January.

With the formal establishment of IPGRI in October 1991 (see p. 3), there was also a need for the IPGRI Board (which has the same membership as the IBPGR Board) to meet. The full IPGRI Board met on 24 January in Rome, while the first IPGRI Executive Committee was held on 1 November in Washington DC, USA.

Four Trustees left the Board during 1992: Mme Y. Cauderon (France), Prof. H.F. Chin (Malaysia), Prof. V.L. Chopra (India) and Dr C.E. Murphy (USA). They were replaced by: Prof. Gelia T. Castillo (Philippines), Dr Julie A.C. Virgo (Australia) and Dr Melaku Worede (Ethiopia).

IPGRI

Administration

Preparations continued in 1992 to ensure that IPGRI would be ready to begin operations immediately after the Headquarters Agreement has been ratified by the Italian Parliament.

A major recruitment exercise was held in 1992 and several new programme staff were appointed. Two key positions: Deputy Director - Programme (Dr M.I. Iwanaga) and Deputy Director - Finance and Administration (Mr C. Thurlow) were filled on 25 and 30 December respectively. Dr Alison McCusker, Deputy Director - Research, left IBPGR in December after a period of five years in which she made a major contribution to IBPGR's programme.

At the end of 1992, the operation of the IBPGR Office at CIMMYT, Mexico was suspended and the Americas programme will be coordinated from an expanded office in CIAT, Cali, Colombia. New offices were opened at ICARDA (Aleppo, Syria) and in Singapore. For all IBPGR's Regional Offices, negotiations were started for the development of Agreements or Memoranda of Understanding with the host institutions and/or the host countries to enable the Regional Offices to operate after IPGRI becomes

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^a joined during 1992

^b left during 1992

operational. In 1992, agreements were signed with ICARDA (for IBPGR's WANA Office), with IDRC (for IBPGR's Singapore Office) and with ICRISAT (for IBPGR's Office at the ICRISAT Sahelian Centre in Niger). The remaining agreements are likely to be concluded in early 1993.

The necessary administrative policies and procedures also were developed for IPGRI's operation, and in January the Board approved IPGRI's Personnel Policies and IPGRI's Financial Policies. In July, additional space was rented to house IBPGR's administrative unit in Headquarters and a major renovation of the existing rented premises took place during the second part of the year.

Staff publications and presentations in 1992

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IBPGR staff in 1992

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^a joined during the year
^b left during the year
^c ceased operation on
31 December 1992
^d changed responsibilities
during 1992

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 Group Leader (and Training)
Ms E. Clancy
 Secretary
Mr P. Stapleton
 Editorial and Publications Manager
Ms R. Raymond
 Public Awareness
Ms P. Blake
 Publications Assistant
Mr R. Bonsignore^b
 Publications Clerk
Mr F. Di Paolo^d
 Publications Clerk
Ms J.A. Dearing
 Library and Bibliographic Information
 Services
Mr M. Nocca
 Library Clerk
Dr M. Perry
 Documentation Methodology
 and Application
Mr T. Hazekamp^a
 Documentation Technology
Ms S. Lovell
 Secretary

Due to the organization restructuring that took place during 1992, many staff changed their responsibilities during the year. The above list indicates positions occupied at the end of 1992. For staff positions occupied at the beginning of 1992 see Annual Report 1991.

Financial Report

Final statement of contributions in 1992 (US\$ equivalent)

Donor	Core	Complementary
ACIAR/CIFOR		45 137 ¹
AIDAB		5 720 ²
Australia	205 173	
Austria	50 000	
Belgium ³		165 258 ⁴
Bulgaria		2 222 ⁵
Canada	524 109	
China	80 000	
CTA		90 750 ⁶
Czechoslovakia		5 000 ⁵
Cyprus		1 250 ⁵
Denmark	348 462	10 000 ⁵
France	200 394	54 660 ⁷
Finland		5 000 ⁵
Germany	319 094	
GTZ		328 087 ⁸
IDRC		53 926 ⁹
India	22 723	
Italy ³		
ISNAR		170 700 ¹⁰
Japan	1 309 610	102 131 ¹¹
Korea (Rep. of)	49 954	
Netherlands ³	645 031	15 000 ⁵
Norway	367 208	5 000 ⁵
ODA, UK		45 495 ¹²
Portugal		18 883 ⁵
Spain	50 000	5 000 ⁵
Sweden	616 702	5 000 ⁵
Switzerland	520 500	5 000 ⁵
UK	932 256	25 000 ⁵
UNEP		50 000 ¹³
USA ³	1 065 000	
World Bank	1 500 000 ¹⁴	
1991 grants received in 1992	738 229 ¹⁵	
Total	9 544 445	1 214 219

Forestry Workshop and Forest Genetic Resources Core Collections Workshop 1992 core contributions received in 1993 Belgium (\$89 175) Italy (\$491 22 and \$750 000 complementary) Netherlands (\$212 844) USA (\$85 000) Studies on breeding systems ECP GR Phase IV African Genetic Resources Seminar and Genebank Manual Coconut Genetic Resources Network Pollination methods and Potato Cryopreservation projects National Genetic Resources Documentation European Information Service Collecting in the CIS Recalcitrant seed project and Coconut Network African genetic resources seminar and training activities including \$800 000 first tranche of 1993 USA (\$175 000) India (\$50 000) Belgium (\$96 229) UNEP (\$30 000) World Bank Stabilization Fund (\$387 000)

Final statement of account 1992

(US\$)

Receipts

Balance at 1 January 1992 ¹	1 098 864
Government contributions ²	9 544 445
Complementary programme ³	1 214 219
Interest accrued in 1992	140 099
Overheads on Complementary Programme	129 083

 12 126 710

Transfers

Refund World Bank Loan	2 000 000
Interest on loan	121 800
Refund to AIDAB ³	717

 (2 122 517)

 10 004 193

Obligations

Core Programme	
Personnel services	3 531 473
Duty travel	1 079 713
Contractual services	1 929 968
General operating expenses	520 612
Supplies and materials	66 164
Equipment	158 776
Fellowships	35 054
Premises (rent and improvement)	467 197
Support costs	448 885

subtotal

 8 237 842

Complementary Programme

ECP/GR/IV	71 876
European Information Service	64 771
Genetic Resources Documentation	123 495
Collecting in Albania	3 821
Latin America public awareness	20 000
Workshops proceedings	23 999
Recalcitrant seeds	20 629
Erosion in genebanks	43 764
Studies on breeding systems	144 330
Potato cryopreservation	128 574
Pollination methods	272 098
Coconut Network	134 615
Collecting in CIS	98 310
Core Collections Workshop	46 679
African genetic resources seminar	158 764
Training	49 671

subtotal

 1 405 396

Total obligations

9 643 238

Balance at 31 December 1992

360 955

¹ Adjustments in 1991 commitments recorded after closure resulted in a higher amount than previously reported (+ \$116). See statement of contributions. ² Funds in excess of expenses incurred for project.

Abbreviations

AASE	African Association of Science Editors, Kenya
ACIAR	Australian Centre for International Agricultural Research, Australia
ACSAD	Arab Centre for Studies in Arid Zones and Dry Lands, Syria
AIDAB	Australian International Development Assistance Bureau, Australia
ATSAF	Council for Tropical and Subtropical Agricultural Research, Germany
BARI	Bangladesh Agricultural Research Institute, Bangladesh
BMZ	Bundesministerium für Wirtschaftliche Zusammenarbeit, Germany
BRG	Bureau des Ressources Génétiques, France
CAAS	Chinese Academy of Agricultural Sciences, China
CABI	CAB International, UK
CATIE	Centro Agronómico Tropical de Investigación y Enseñanza, Costa Rica
cDNA	Complementary DNA
CD-ROM	Compact disc - read-only memory
CENARGEN	Centro Nacional de Pesquisa de Recursos Genéticos e Biotecnologia, Brazil
CGIAR	Consultative Group on International Agricultural Research
CGN	Centre for Genetic Resources, The Netherlands
CI	Conservation International, USA
CIAT	Centro Internacional de Agricultura Tropical - CGIAR
CIFOR	Centre for International Forestry Research - CGIAR
CIMMYT	Centro Internacional de Mejoramiento de Maíz y Trigo - CGIAR
CIP	Centro Internacional de la Papa - CGIAR
CIRAD	Centre de Coopération Internationale en Recherche Agronomique pour le Développement, France
CIS	Commonwealth of Independent States
CMV-B	Cucumber mosaic virus (banana strain)
COGENT	Coconut Genetic Resources Network
COLCIENCIAS	Instituto Colombiano para el Desarrollo de la Ciencia y la Tecnología Francisco José de Caldas, Colombia
CTA	Technical Centre for Agricultural and Rural Cooperation, The Netherlands
DGIS	Directorate General for International Cooperation, The Netherlands
DMSO	Dimethylsulphoxide
DNA	Deoxyribonucleic acid
DSM	Deutsche Sammlung von Mikroorganismen und Zellkulturen GmbH, Germany
EAP	Escuela Agrícola Panamericana, Honduras
ECP/GR	European Cooperative Programme for Crop Genetic Resources Networks
EMBRAPA	Empresa Brasileira de Pesquisa Agropecuária, Brazil
FAL	Institut für Pflanzenbau und Pflanzenzüchtung der Bundesforschungsanstalt für Landwirtschaft, Germany
FAO	Food and Agriculture Organization of the United Nations, Italy
GTZ	Deutsche Gesellschaft für Technische Zusammenarbeit, Germany
IARC	International Agricultural Research Centre
ICA	Instituto Colombiano Agropecuario, Colombia
ICARDA	International Center for Agricultural Research in the Dry Areas - CGIAR
ICETEX	Instituto Colombiano de Crédito Educativo y Estudios Técnicos en el Exterior Mariano Ospina Pérez, Colombia
ICLARM	International Center for Living Aquatic Resources Management - CGIAR
ICRAF	International Council for Research in Agroforestry - CGIAR
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics - CGIAR
IDRC	International Development Research Centre, Canada

IICA	Instituto Interamericano de Cooperación para la Agricultura, Costa Rica
IITA	International Institute of Tropical Agriculture - CGIAR
ILCA	International Livestock Centre for Africa - CGIAR
ILRAD	International Laboratory for Research on Animal Diseases - CGIAR
INIA	Instituto Nacional de Investigaciones Agropecuarias, Chile
INIBAP	International Network for the Improvement of Banana and Plantain - CGIAR
INIVIT	Instituto Nacional de Investigaciones de Viandas Tropicales, Cuba
INRA	Institut National de la Recherche Agronomique, France
INSA	Vietnam Agricultural Science Institute, Vietnam
INTA	Instituto Nacional de Tecnología Agropecuaria, Argentina
IPK	Institut für Pflanzengenetik und Kulturpflanzenforschung, Germany
IR1	Inter-Regional Potato Introduction Project, USA
IRFA	Institut de Recherche sur les Fruits et Agrumes, France
IRHO	Institut de Recherche pour les Huiles et Oléagineux, France
IRRI	International Rice Research Institute - CGIAR
IUCN	World Conservation Union, Switzerland
KARI	Kenya Agricultural Research Institute, Kenya
LAN	Local area network
NARS	National Agricultural Research System
NBPGR	National Bureau of Plant Genetic Resources, India
NGB	Nordic Gene Bank, Sweden
NGO	Non-governmental organization
OAS	Organization of American States, USA
ODA	Overseas Development Administration, UK
ORSTOM	Institut Français de Recherche Scientifique pour le Développement en Coopération, France
PAGE-PACA	Groupement de Recherche et de Développement sur le Patrimoine Génétique Végétal et Animal de la Région Provence-Alpes-Côte d'Azur, France
PGRI	Plant Genetic Resources Institute, DPR Korea
RAFI	Rural Advancement Foundation International, Canada
RAPD	Random amplified polymorphic DNA
RDA	Research and Development Association, Rep. Korea
RECSEA	Regional Committee for Southeast Asia
REDARFIT	Andean Plant Genetic Resources Network
REMERFI	Central American Plant Genetic Resources Network
RFLP	Restriction fragment length polymorphism
RNA	Ribonucleic acid
SADC	Southern Africa Development Community
SAFGRAD	Consultative Advisory Committee on Semi-Arid Food Grain Research and Development, Nigeria
SPCSV	Sweet potato chlorotic stunt virus
SPFMV	Sweet potato feathery mottle potyvirus
SPVD	Sweet potato virus disease
SRGB	SADC Regional Gene Bank
SIDA	Swedish International Development Authority, Sweden
ssRNA	Single-stranded RNA
TAC	Technical Advisory Committee - CGIAR
TROPIGEN	Amazonian Plant Genetic Resources Network
UNCED	United Nations Conference on Environment and Development
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme, Kenya
UNP	Universidad Nacional de Palmira, Colombia
USDA	United States Department of Agriculture, USA
USFWS	United States Fish and Wildlife Service, USA
UTP	Uridine triphosphate
WANA	West Asia and North Africa region
WARDA	West Africa Rice Development Association, CGIAR
WHO	World Health Organization, Switzerland
WWF	World Wide Fund for Nature, Switzerland
ZLIRC	Zonal Livestock Training and Research Center, Tanzania

Highlights of 1992

Representatives of six governments added their signatures in 1992 to an agreement establishing the International Plant Genetic Resources Institute (IPGRI) as an independent Institute of the Consultative Group on International Agricultural Research (CGIAR). Significant progress was made towards the ratification of the Establishment and Headquarters Agreements by the Italian Government. By the end of 1993, IBPGR will probably have ceased operations, to be replaced by IPGRI, an Institute with a new look and a new direction. Steps were taken in 1992 to ensure a smooth transition. IPGRI's Strategy, 'Diversity for Development', was finalized.

Programme activities

IBPGR began to implement the IPGRI Strategy in March/April 1992. The Strategy describes a single coherent programme to fulfill the Institute's four strategic objectives. To carry out this programme, IBPGR adopted and implemented a structure of eight Programme Groups in 1992; five of the groups are concerned with regional activities and three with thematic topics.

Regional Groups

Sub-Saharan Africa Group

The Sub-Saharan Africa Group concentrated on supporting the development of national programmes in the region. Nearly all countries in the region have formally established a programme of plant genetic resources. A seminar on 'Safeguarding the Genetic Resources of Africa's Traditional Crops' brought together representatives of United Nations agencies, international agricultural research centres, national plant genetic resources programmes, non-governmental organizations, and farmers and herbalists.

West Asia and North Africa Group

The Regional Office was transferred to the International Center for Agricultural Research in the Dry Areas (ICARDA) in Syria in 1992. The West Asia and North Africa Network on Plant Genetic Resources was established with the participation of 13 countries from the region, in collaboration with ICARDA, Arab Centre for the Study of Arid Zones and Dry Lands, Syria and the Food and Agriculture Organization of the United Nations (FAO). The Regional Office will serve as the secretariat to the Network. A committee was formed to identify common problems and six working groups were established. The Regional Group Leader visited a number of national programmes to provide scientific and technical advice.

Asia, the Pacific and Oceania Group

The new Regional Office in Singapore started operations in 1992 with the arrival of the Group Leader and the Genetic Diversity/Conservation Officer. Work started to develop methodologies to assess national programme needs. Staff visited countries and institutions in the region to assist in national programme development. Two subregional programmes on plant genetic resources - the Regional Committee for South East Asia and the South Asian Plant Genetic Resources Coordinators - held consultations in 1992. The consultations sought to strengthen the management and use of plant genetic resources among member countries. Two regionally based short training courses took place in 1992. Two issues of the Regional Newsletter for Asia and the Pacific were published through IBPGR's Delhi and Beijing Offices.

Americas Group

The Americas Group, considerably strengthened in 1992, worked to assist national programmes to establish their research priorities and apply innovative scientific approaches to the problems of conservation and use of native genetic resources. The Regional Office sponsored a number of training courses in conjunction with other organizations. The Group assisted in developing three subregional networks to achieve IBPGR's goals in the region: The Central America Network on Plant Genetic Resources; the Andean Network on Plant Genetic Resources; and the Amazonian Network on Plant Genetic Resources. The networks are sponsored jointly with the Interamerican Institute for Cooperation on Agriculture and involve close collaboration with other national and international institutions.

Europe Group

Following a recommendation of the FAO Commission on Plant Genetic Resources, FAO and IBPGR organized a joint mission to survey the security of germplasm collections in eastern Europe in mid-1992. A meeting attended by donor country representatives agreed on the need to ensure that emergency situations were addressed quickly. By the end of 1992, several countries and the United Nations Development Programme had expressed a strong interest in supporting an initiative to assist the Commonwealth of Independent States and eastern European countries. IBPGR agreed to act as the executing agency.

Thematic Groups

Genetic Diversity Group

IBPGR focused on the collecting of diverse gene pools in 1992, especially those threatened with genetic erosion. With national programmes, over 3000 samples of forages, cereals, grain legumes, roots and tubers and fruits were collected, particularly from tropical and subtropical regions.

A project completed in 1992 identified variable and hypervariable DNA markers for *Phaseolus* and *Vigna unguiculata*, to study the genetic resources of the species. The results emphasized the potential value of the wild

relatives of these species in breeding to widen the genetic base of current cultivars.

IBPGR collaborated in organizing an international workshop in Brazil on the development of core collections. The workshop identified a number of priority research topics, for example the development of core collections in a wider range of crop types and the ways in which a core collections approach might be used in assembling germplasm collections.

Germplasm Maintenance and Use Group

IBPGR continued to support research to improve medium- and long-term *in vitro* conservation technology for recalcitrant seed-producing and clonally propagated crops.

An IBPGR-funded project at the Universiti Pertanian Malaysia produced encouraging results on preserving excised embryos of oilpalm and cocoa in liquid nitrogen. IBPGR supported several projects on the effect of very low seed moisture content on seed longevity and on genetic stability of seeds.

The joint FAO/IBPGR programme to develop technical guidelines for the safe movement of germplasm finalized the drafts for sugarcane and coconut. Work was done on guidelines for small fruit germplasm.

A rapid indexing method for sweet potato chlorotic stunt virus was developed that will expedite the movement of sweet potato germplasm.

The first meeting of the Steering Committee of the Coconut Genetic Resources Network was held in 1992 and steps were taken to establish an international database. Thirteen representatives from national cassava programmes agreed to launch an international cassava network that will be implemented regionally. The Barley Core Collection Committee endorsed the approach of the previous European barley core collection task force. The International Barley Core Collection should be available by 1995.

Documentation, Information and Training Group

IBPGR's capacity for handling and exchanging information was improved with the installation of a local area network at Headquarters. IBPGR expanded its use of geographical information systems in data analysis. A collaborative project to develop a self-teaching documentation guidebook neared completion. Another collaborative activity resulted in the publication of the first three issues of Plant Genetic Resources Abstracts. IBPGR published over 20 new titles.

On the public awareness front, IBPGR was involved in the United Nations Conference on Environment and Development and the NGO Global Forum, representing the CGIAR system at both events.

As well as providing short courses, individual and MSc degree training during the year, IBPGR made a significant move towards regionalization of postgraduate training to better meet the needs of national programmes.

Collaborative activities

CGIAR/IARCs

At the request of the CGIAR, IBPGR prepared a discussion paper on a common strategy for plant genetic resources. The most important elements of the proposed strategy are: strengthening the role of the CGIAR centres in the global system for conservation and use of genetic resources; ecoregional approaches to the genetic resources of crops of regional or local importance; and increased coordination of plant genetic research work within the CGIAR.

FAO

IBPGR and FAO continued to cooperate on project formulation for technical assistance and also on providing consultancy services for the implementation of field projects. FAO and IBPGR are working towards merging the FAO network of base collections and the IBPGR network of base collections. IBPGR has encouraged national and international genebanks to bring their collections into the FAO network. A joint FAO/IBPGR Expert Consultation recommended genebank standards for endorsement by the Commission on Plant Genetic Resources. The institutions continued to collaborate closely in their work on forest genetic resources.

NGOs

IBPGR increased its efforts to forge links with non-governmental organizations in 1992. Representatives of IBPGR and a number of such organizations from Africa and around the world met in Nairobi to exchange information on their activities and to identify potential areas of collaboration. The CGIAR started a consultation process between its centres and interested non-governmental organizations on policy issues such as intellectual property protection as well as on the possibilities of technical cooperation. Areas for future collaboration were discussed at regional meetings in Colombia and Thailand. To facilitate the consultation process, a meeting was held in Canada to discuss the objectives of the consultations and to improve communications between the centres and the organizations.

UNCED

A small delegation from IBPGR represented the CGIAR in biodiversity issues at the United Nations Conference on Environment and Development (UNCED). As an International Organization, IBPGR was admitted as an observer to the formal diplomatic meetings. A CGIAR office was set up at the main Summit site and IBPGR organized an exhibition booth at the Global Forum.

IBPGR contacted the United Nations Environment Programme, which will provide the Interim Secretariat for the Convention on Biological Diversity, to assist in further developing and implementing the Convention. The Institute established an in-house UNCED Liaison Group to follow up on these matters.

Événements marquants de 1992

Les Représentants de six gouvernements ont ajouté leur signature à un accord visant à faire de l'Institut international des ressources phylogénétiques (IPGRI) un organisme indépendant du Groupe consultatif pour la recherche agricole internationale (CGIAR). Des progrès considérables ont été réalisés en vue de la ratification des accords d'établissement et de Siège par le Gouvernement italien. D'ici à la fin de 1993, l'IBPGR aura vraisemblablement cessé ses activités et sera remplacé par l'IPGRI, doté d'un nouveau profil et de nouvelles orientations. Des mesures ont été prises en 1992 pour assurer une transition en douceur. La Stratégie de l'IPGRI intitulée «diversité pour le développement» a été mise au point.

Activités du programme

L'IBPGR a commencé à mettre en oeuvre la Stratégie de l'IPGRI en mars/avril 1992. La Stratégie présente un programme homogène unique pour atteindre les quatre objectifs stratégiques de l'Institut. Pour mener à bien ce programme, l'IBPGR a adopté et mis en oeuvre en 1992 une structure avec Groupes de programme; cinq groupes se concentrent sur les activités régionales et les trois autres sur des thèmes.

Groupes régionaux

Groupe Afrique subsaharienne

Le Groupe Afrique subsaharienne s'est concentré sur l'élaboration de programmes nationaux dans la région. Presque tous les pays de la région ont mis en place officiellement un programme pour les ressources phylogénétiques. Un séminaire sur «La sauvegarde des ressources génétiques des cultures traditionnelles d'Afrique» a rassemblé des représentants des organismes des Nations Unies, des centres internationaux de recherche agricole, des programmes nationaux sur les ressources phylogénétiques, des organisations non gouvernementales, ainsi que des agriculteurs et des herboristes.

Groupe Asie occidentale et Afrique du Nord

Le Bureau régional a été transféré en 1992 au Centre international de recherche agricole dans les zones arides (ICARDA), en Syrie. Le Réseau sur les ressources phylogénétiques d'Asie occidentale et d'Afrique du Nord a été créé avec la participation de 13 pays de la région, en collaboration avec l'ICARDA, le Centre arabe pour l'étude des zones arides et non irriguées (Syrie) et l'Organisation des Nations Unies pour l'alimentation et l'agriculture (FAO). Le Bureau régional de l'IPGRI assurera le secrétariat du Réseau. Un comité chargé d'identifier les problèmes communs a été créé, ainsi que six groupes de travail. Le responsable du Groupe régional s'est rendu sur le terrain pour

examiner un certain nombre de programmes nationaux et donner des avis scientifiques et techniques.

Groupe Asie, Pacifique et Océanie

Ce nouveau Bureau régional, établi à Singapour, a commencé ses activités en 1992, avec de l'arrivée du responsable de Groupe et d'un spécialiste en diversité génétique et en conservation. Des méthodologies permettant d'évaluer les besoins des programmes nationaux sont en cours de mise au point. Du personnel s'est rendu dans les pays et dans les instituts de la région pour aider à l'élaboration de programmes nationaux. Deux programmes sous-régionaux sur les ressources phylogénétiques - le Comité régional pour l'Asie du Sud-Est et les coordinateurs des ressources phylogénétiques d'Asie du Sud - ont organisé des consultations en 1992. Celles-ci avaient pour but de renforcer la gestion et l'utilisation des ressources phylogénétiques dans les pays membres. Deux cours régionaux de formation de courte durée ont été organisés en 1992. Deux numéros du bulletin régional pour l'Asie et le Pacifique ont été publiés par l'intermédiaire des Bureaux de l'IBPGR à Delhi et à Beijing.

Groupe Amérique

Le Groupe Amérique, considérablement renforcé en 1992, s'est attaché à aider les programmes nationaux à définir leurs priorités en matière de recherche et à appliquer des approches novatrices aux problèmes de conservation et d'utilisation des ressources génétiques locales. Le Bureau régional a parrainé un certain nombre de stages de formation, en collaboration avec d'autres organisations. Le Groupe a contribué à la création de trois réseaux sous-régionaux en vue d'atteindre les objectifs de l'IBPGR dans la région: le Réseau sur les ressources phylogénétiques d'Amérique centrale; le Réseau andin sur les ressources phylogénétiques; et le réseau amazonien sur les ressources phylogénétiques. Ces réseaux sont parrainés conjointement avec l'Institut interaméricain de coopération pour l'agriculture et impliquent une étroite collaboration avec d'autres instituts nationaux et internationaux.

Groupe Europe

A la suite d'une recommandation formulée par la Commission des ressources phylogénétiques de la FAO, la FAO et l'IBPGR ont organisé une mission conjointe à la mi-1992, pour faire le point sur la sécurité des collections de matériel génétique en Europe de l'Est. Une réunion à laquelle ont participé des représentants des pays donateurs a convenu sur la nécessité de garantir une réaction rapide face aux situations d'urgence. A la fin de 1992, plusieurs pays et le Programme des Nations Unies pour le développement ont exprimé leur vif intérêt quant au soutien d'une initiative visant à aider la Communauté des Etats indépendants et les pays d'Europe de l'Est. L'IBPGR a accepté d'être l'organe d'exécution de cette initiative.

Groupes thématique

Groupe Diversité génétique

L'IBPGR a contribué en 1992 à la collecte de diverses espèces, spécialement celles menacées par l'érosion génétique. Dans le cadre de programmes nationaux, plus de 3000 échantillons de fourrages, de céréales, de légumineuses, de racines et tubercules et de fruits, provenant en particulier des régions tropicales et sous-tropicales ont été collectés.

Un projet complété en 1992 a identifié des marqueurs ADN variables et hypervariables pour *Phaseolus* et *Vigna unguiculata*, afin d'étudier les ressources génétiques de ces espèces. Les résultats ont souligné la valeur potentielle des espèces sauvages apparentées en matière de multiplication, pour élargir la base génétique des cultivars actuels.

L'IBPGR a collaboré à l'organisation d'un atelier international au Brésil sur la création d'échantillons représentatifs. L'atelier a identifié un certain nombre de priorités, concernant par exemple la création d'échantillons représentatifs pour une gamme plus large de types de cultures et les moyens d'utiliser cette approche pour la création de collections de matériel génétique.

Groupe Conservation et utilisation du matériel génétique

L'IBPGR a continué de soutenir la recherche pour améliorer la technique de conservation *in-vitro* à moyen et long terme des semences récalcitrantes et des cultures obtenues par propagation clonale.

Un projet financé par l'IBPGR à l'Universiti Pertanian de Malaisie a obtenu des résultats encourageants en matière de conservation dans l'azote liquide d'embryons excisés de palmier à huile et de cacao. L'IBPGR a soutenu plusieurs projets concernant les effets d'une très faible teneur en humidité sur la longévité des semences, ainsi que la stabilité génétique des semences.

Dans le cadre du programme conjoint FAO/IBPGR d'élaboration de directives techniques pour la circulation sans risque du matériel génétique, les projets de directives concernant la canne à sucre et la noix de coco ont été rédigés sous leur forme définitive. Une réunion a été organisée pour préparer des directives pour le matériel génétique des petits fruits.

Une méthode d'indexage rapide pour le virus du rabougrissement chlorotique de la patate douce a été mise au point, qui accélérera la circulation du matériel génétique de cette espèce.

La première réunion du Comité directeur du Réseau des ressources phylogénétiques de la noix de coco s'est tenue en 1992, et des mesures ont été prises en vue de créer une base de données internationale. 13 représentants de programmes nationaux sur le manioc ont convenu de lancer un réseau international pour cette culture, qui sera mis en oeuvre au niveau régional. Le Comité pour la "core collection" de l'orge a adopté l'approche suivie dans ce domaine par le groupe de travail Européen. La "core collection" internationale de l'orge devrait être disponible en 1995.

Groupe Documentation, information et formation

La capacité de l'IBPGR à recueillir et diffuser l'information s'est améliorée grâce à l'installation d'un réseau informatique local au Siège. L'IBPGR a eu plus largement recours aux systèmes d'information géographique pour l'analyse des données. Un projet concerté visant à l'élaboration d'un ouvrage didactique a été pratiquement achevé. La coopération a également permis la publication des trois premiers numéros de "Plant Genetic Resources Abstracts". L'IBPGR a publié plus de 20 nouveaux titres.

En ce qui concerne la sensibilisation du grand public, l'IBPGR a participé à la Conférence des Nations Unies pour l'environnement et le développement et au Forum mondial des ONG, représentant le CGIAR à ces deux occasions.

Outre l'organisation au cours de l'année de stages de courte durée, de cours de formation individuelle et de cours de maîtrise, l'IBPGR a réalisé de grands progrès en vue du développement au niveau régional de programmes de formation de troisième cycle, afin de mieux répondre aux besoins des programmes nationaux.

Activités conjointes

CGIAR/IARCs

A la demande du CGIAR, l'IBPGR a préparé un document de synthèse sur une stratégie commune en matière de ressources phylogénétiques. Les principaux éléments de la stratégie proposée sont les suivants: renforcement du rôle des centres du CGIAR au sein du système mondial de conservation et d'utilisation des ressources génétiques; adoption d'approches écorégionales pour les ressources génétiques des cultures présentant une importance régionale ou locale; coordination accrue des recherches sur les ressources phylogénétiques au sein du CGIAR.

FAO

L'IBPGR et la FAO ont continué de coopérer à la formulation de projets d'assistance technique et à la prestation de services de consultants pour la mise en oeuvre de projets sur le terrain. La FAO et le CIRP travaillent au regroupement de leurs réseaux respectifs de collections de base. L'IBPGR a encouragé les banques de gènes nationales et internationales à placer leurs collections dans le réseau de la FAO. Une consultation mixte d'experts FAO/IBPGR a soumis à l'approbation de la Commission des ressources phylogénétiques des normes pour les banques de gènes. La FAO et l'IBPGR ont continué de collaborer étroitement dans le domaine des ressources génétiques forestières.

ONG

En 1992, l'IBPGR a accentué ses efforts visant à établir des liens avec les organisations non gouvernementales. Des représentants de l'IBPGR et un certain nombre d'ONG d'Afrique et du monde entier se sont réunis à Nairobi pour échanger des informations sur leurs activités et identifier les domaines de collaboration éventuels. Le CGIAR a entrepris des consultations entre ses centres et les ONG intéressées sur des questions de politique telles que la protection de la propriété intellectuelle, ainsi que sur les possibilités de coopération technique. Les domaines de collaboration future ont été examinés au cours de réunions régionales en Colombie et en Thaïlande. Pour faciliter le processus de consultation, une réunion s'est tenue au Canada afin d'examiner les objectifs des consultations et d'améliorer les communications entre les centres et les ONG. L'IBPGR a contribué à l'organisation de premières rencontres méditerranéennes sur le patrimoine génétique domestique et les savoirs populaires qui se sont déroulées à Manosque.

CNUED

Une délégation restreinte de l'IBPGR a représenté le CGIAR pour les questions de biodiversité examinées à la Conférence des Nations Unies pour l'environnement et le développement (CNUED). En tant qu'organisation internationale, l'IBPGR a été admis à titre d'observateur aux réunions diplomatiques formelles. Un bureau du CGIAR a été établi dans les locaux principaux du Sommet et l'IBPGR a mis en place un stand d'exposition au Forum mondial.

L'IBPGR a contacté le Programme des Nations Unies pour l'environnement, qui assurera le Secrétariat par intérim de la Convention sur la diversité biologique, afin d'aider à l'élaboration ultérieure et à la mise en oeuvre de la Convention. L'institut a créé un Groupe de liaison interne pour assurer le suivi de ces questions relatives à la CNUED.

Acontecimientos 1992

Representantes de seis Gobiernos firmaron en 1992 un acuerdo de establecimiento del Instituto Internacional de Recursos Fitogenéticos (IPGRI) como institución independiente del Grupo consultivo para la investigación agrícola internacional (CGIAR). El Gobierno Italiano avanzó considerablemente en la ratificación de los Acuerdos de Establecimiento y de Sede. Se espera que para fines de 1993, el IBPGR se haya transformado definitivamente en el IPGRI, un instituto con una nueva imagen y una nueva dirección. En 1992 se terminó el documento Diversidad para el Desarrollo, que explica la estrategia del IPGRI, y se tomaron acciones para hacer menos drástico el periodo de transición.

Actividades del programa

A partir de marzo de 1992, el IBPGR comenzó a poner en práctica la Estrategia del IPGRI, que describe un programa único y coherente que satisface los cuatro objetivos estratégicos del instituto. Para llevar a cabo este programa, el IBPGR realizó y adoptó en 1992 una estructura de ocho Grupos de programa, cinco de los cuales se relacionan con actividades regionales y tres con temas específicos.

Grupos regionales

Grupo de Africa subsahariana

El Grupo de Africa subsahariana se concentró en apoyar el desarrollo de los programas nacionales de la región. A la fecha, casi todos los países de la región han establecido formalmente un programa de recursos fitogenéticos. Con el auspicio de varias organizaciones representantes de las Naciones Unidas, centros internacionales de investigación agrícola, programas nacionales de recursos fitogenéticos, organizaciones no gubernamentales, agricultores y botánicos se reunieron en un seminario sobre "Protección de los Recursos Genéticos de los Cultivos Tradicionales de Africa".

Grupo de Asia occidental y norte de Africa

En 1992 se transfirió la Oficina Regional al Centro Internacional de Investigación Agrícola en las Zonas Secas (ICARDA), en la República Arabe Siria. Se estableció la Red de Recursos Fitogenéticos de Asia occidental y norte de Africa, con la participación de 13 países de la región en colaboración con ICARDA, el Centro Arabe para el Estudio de las Zonas Áridas y Tierras de Secano, la República Arabe Siria y la Organización de las Naciones Unidas para la Agricultura y la Alimentación (FAO). La Oficina Regional actuará como secretariado de la Red. Se constituyó un comité que identificará los

problemas comunes y se crearon seis grupos de trabajo. El Líder del Grupo Regional visitó varios países con el fin de proporcionar asesoramiento técnico y científico a los programas nacionales.

Grupo de Asia, el Pacífico y Oceanía

En 1992 comenzó sus operaciones la nueva Oficina Regional de Singapur, con la llegada del nuevo Líder del Grupo y del Oficial de Conservación/Diversidad genética. Se comenzaron a desarrollar metodologías para determinar las necesidades de los programas nacionales. El personal visitó varios países e instituciones de la región con el fin de facilitar el desarrollo de los programas nacionales. Durante 1992 se consultó a dos programas subregionales - el Comité Regional para el sudeste de Asia y los Coordinadores de Recursos fitogenéticos del sur de Asia. Las reuniones se realizaron con el fin de fortalecer el manejo y el uso de los recursos fitogenéticos entre los países miembros. Además, en 1992 se realizaron dos cursos cortos de carácter regional. Las oficinas del IBPGR en Nueva Delhi y Beijing publicaron dos números del Noticiero para Asia y el Pacífico.

Grupo de las Américas

El Grupo de las Américas, reforzado considerablemente durante 1992, trabajó para ayudar a los programas nacionales a establecer sus prioridades de investigación y aplicar enfoques científicos innovativos a los problemas de conservación y utilización de los recursos genéticos nativos. La Oficina Regional conjuntamente con otras organizaciones, patrocinaron varios cursos de capacitación. Para cumplir con los objetivos del IBPGR sobre recursos fitogenéticos en la región, el Grupo colaboró en el desarrollo de tres redes subregionales en recursos fitogenéticos que cubrirán América Central, la Región Andina y la Cuenca Amazónica, respectivamente. Las redes propuestas son auspiciadas conjuntamente por el IBPGR y el Instituto Interamericano de Cooperación para la Agricultura y mantienen una estrecha colaboración con otras instituciones nacionales e internacionales.

Grupo de Europa

Siguiendo una recomendación de la Comisión de Recursos Fitogenéticos de la FAO efectuada a mediados de 1992, el IBPGR y la FAO organizaron una misión conjunta para evaluar la seguridad de las colecciones de germoplasma en Europa oriental. En el desarrollo de una reunión, los representantes de los países donantes estuvieron de acuerdo en la necesidad de atender a tiempo las situaciones de emergencia. A finales de 1992, varios países y el Programa de las Naciones Unidas para el Desarrollo expresaron un gran interés en ayudar la República de Estados Independientes y países de Europa oriental. El IBPGR acordó servir de agencia ejecutora.

Grupos en temas específicos

Grupo de Diversidad Genética

El IBPGR fue más estratégico en la recolección de acervos genéticos, concentrándose en aquéllos que se encuentran en peligro de erosión genética. En colaboración con los programas nacionales, se recolectaron 3000 muestras de forrajes, cereales, leguminosas de grano, frutas, raíces y tubérculos, especialmente en regiones tropicales y subtropicales.

En 1992 culminó un proyecto que identificó marcadores variables e hipervariables de ADN en *Phaseolus* y *Vigna unguiculata*, para usarlos en estudios de recursos genéticos de ambas especies. Los resultados destacaron el valor potencial de los parientes silvestres de estas especies en trabajos de mejoramiento conducentes a ampliar la base genética de los cultivares existentes.

El IBPGR colaboró en la organización de un taller internacional sobre el desarrollo de colecciones núcleo en Brasil. El taller identificó varios temas de investigación prioritarios, como el desarrollo de colecciones núcleo en un mayor rango de tipos de cultivos y las formas de usar un enfoque de colecciones núcleo en la organización de colecciones de germoplasma.

Grupo de Mantenimiento y Utilización de Germoplasma

El IBPGR continuó apoyando la investigación para mejorar la tecnología de conservación *in vitro* a mediano y largo plazo de cultivos que producen semilla recalcitrante y de aquéllos que se propagan por medio de clones.

Un proyecto sobre conservación en nitrógeno líquido de embriones de palma de aceite y cacao, financiado por el IBPGR en la Universidad de Pertanian, Malasia, produjo resultados promisorios. El IBPGR apoyó varios proyectos que estudian el efecto de reducir al mínimo el contenido de humedad de las semillas en la longevidad y la estabilidad genética de las mismas.

El programa conjunto de la FAO y el IBPGR que desarrolla directrices técnicas para el transporte seguro de germoplasma finalizó los borradores de las series caña de azúcar y coco. También se trabajó en el desarrollo de directrices para germoplasma de frutas pequeñas.

Se desarrolló un método de indización rápida para el virus de achaparramiento clorótico de la batata que acelerará el transporte de germoplasma de la batata.

En 1992 se reunió por primera vez el Comité Coordinador de la Red de Recursos Genéticos en Coco y se tomaron medidas para establecer una base de datos internacional. Trece representantes de programas nacionales de yuca acordaron formar una red internacional en este cultivo, cuya estrategia global se realizará por regiones. El Comité de la Colección Núcleo de Cebada ratificó el enfoque utilizado por el anterior grupo europeo de trabajo en esta colección. Se espera que la Colección Mundial Núcleo de Cebada esté disponible en 1995.

Grupo de Capacitación, Documentación e Información

Se mejoró la capacidad para manejar e intercambiar información, mediante la instalación de una red local en la sede del IBPGR. El IBPGR incrementó la utilización de sistemas de información geográfica en el análisis de datos. Está casi concluido un proyecto colaborativo para desarrollar una guía autodidáctica de documentación. Otra actividad colaborativa fructificó con la publicación de los tres primeros números de Plant Genetic Resources Abstracts. El IBPGR publicó más de 20 nuevas obras.

En cuanto a las actividades de información pública, el IBPGR estuvo involucrado, en representación del CGIAR, en la Conferencia de las Naciones Unidas sobre Medio Ambiente y Desarrollo y en el Foro Global de las ONG.

El IBPGR dio un paso muy importante hacia la regionalización de la capacitación individual y a nivel de postgrado, así como también realizando

cursos breves durante el año, con el fin de satisfacer mejor las necesidades de los programas nacionales.

Actividades colaborativas

CGIAR/IARCs

En respuesta a una solicitud del CGIAR, el IBPGR preparó un documento de discusión sobre la adopción de una estrategia común en recursos fitogenéticos. Los principales elementos de la estrategia propuesta son: el fortalecimiento del papel de los Centros del CGIAR en el sistema global en la conservación y utilización de los recursos fitogenéticos; la utilización de enfoques ecorregionales para los recursos genéticos de cultivos de importancia local o regional; y una mejor coordinación de las actividades en recursos fitogenéticos en el CGIAR.

FAO

El IBPGR y la FAO han cooperado en la formulación de proyectos de asistencia técnica y han prestado servicios de asesoría para la realización de proyectos de campo. La FAO y el IBPGR están trabajando conjuntamente para fusionar las bases de colecciones base de ambas instituciones. El IBPGR ha instado a los bancos de germoplasma nacionales e internacionales a unir sus colecciones a la Red de la FAO. Expertos de la FAO y del IBPGR hicieron recomendaciones sobre los estándares de los bancos de germoplasma, que deberán ser ratificados por la Comisión de Recursos Fitogenéticos. Las instituciones colaboraron intensamente en el área de recursos genéticos forestales.

Organizaciones no gubernamentales

En 1992, el IBPGR dedicó un mayor esfuerzo a establecer vínculos con organizaciones no gubernamentales (ONG). Representantes del IBPGR y de varias ONG de Africa y de otros países se reunieron en Nairobi para intercambiar información sobre sus actividades e identificar posibles áreas de cooperación. El CGIAR inició un proceso de consulta entre sus centros y las ONG interesadas en aspectos políticos, tal como la protección de la propiedad intelectual y también las posibilidades de cooperación técnica. En reuniones regionales realizadas en Colombia y Tailandia se acordaron las áreas de cooperación futura. En otra reunión realizada en Canadá se analizaron los objetivos de dichas consultas con el fin de facilitar su realización y mejorar la comunicación entre los centros y las organizaciones.

UNCED

Una pequeña delegación del IBPGR representó al CGIAR en la Conferencia de las Naciones Unidas sobre Medio Ambiente y Desarrollo (UNCED), en los asuntos sobre biodiversidad. Por ser una organización internacional, el IBPGR fue admitido como observador en las reuniones diplomáticas formales. El CGIAR estableció una oficina en el sitio principal de la Cumbre de la Tierra y el IBPGR organizó un puesto de exhibición en el Foro Global.

El IBPGR hizo contactos con el Programa de las Naciones Unidas para el Medio Ambiente, que actuará como Secretariado Interino para la Convención sobre Diversidad Biológica, para colaborar en el desarrollo y realización de la misma. El instituto estableció un Grupo de Enlace Interno del UNCED para continuar estas actividades.

1992年要 闻

1992年,又有6个国家的政府代表在同意建立国际植物遗传资源研究所(IPGRI)的协议上签字。该协议承认国际植物遗传资源研究所作为国际农业研究磋商小组内一个独立的研究所。在意大利政府批准国际植物遗传资源研究所建立和总部所在地的协议方面也取得了重要的进展。到1993年年底,国际植物遗传资源委员会(IBPGR)很可能全部停止运转,由国际植物遗传资源研究所取而代之,届时这个新的机构将展示新的面貌和新的方向。为了平稳地过渡,各项工作早在1992年就着手进行,已经完成了国际植物遗传资源研究所“多样性发展战略”。

项目活动

国际植物遗传资源委员会从1992年三、四月间开始实施国际植物遗传资源研究所的战略计划,这个战略体现了为完成本研究所的四个战略目标而制定的整体规划。为了实施上述计划,国际植物遗传资源委员会在1992年正式设立了8个项目组,其中5个组专门从事地区项目,3个组涉及综合项目。

地区项目

非洲撒哈拉以南地区组:非洲撒哈拉以南地区组全力支持该地区国家项目的进展。在这一地区几乎所有的国家都已经正式地建立了一个有关植物遗传资源的项目。“保护非洲传统农作物遗传资源”研讨会汇集了来自联合国机构、国际农业研究中心、国家植物遗传资源项目、非政府组织以及农民和草本植物学家的代表们。

西亚和北非组:这个地区办事处1992年迁到了位于叙利亚的国际干旱地区农业研究中心(ICARDA)。与国际干旱地区农业研究中心、阿拉伯干旱地区和旱地研究中心、叙利亚以及联合国粮农组织(FAO)共同合作,成立了西亚和北非植物遗传资源协作网,它的成员来自该地区的13个国家。国际植物遗传资源委员会的地区办事处将作为协作网的秘书处。该协作网还指定了一个委员会处理共同的问题,并分设六个工作小组。该地区组的组长访问了一些国家项目,就科学技术方面的问题提出了建议。

亚洲、太平洋和大洋洲组:新的地区办事处位于新加坡,在地区组的组长和负责多样性和保存的负责人到任后,于1992年开始运转。首先制定了评估国家项目需要的方法,工作人员为了协助国家项目的发展,走访了该地区的众多国家和研究机构。1992年就两个地区性的植物遗传资源项目(东南亚地区委员会和南亚植物遗传资源协调人员)召开了多次协商会,目的在于试图加强

各成员国之间在植物遗传资源方面的管理和利用。1992年举办了两个地区性的短期培训班。由新德里办事处和北京办事处共同出版了两期(中英文)“亚洲及太平洋地区通讯”。

美洲地区组:1992年加强了这个地区组的工作,帮助国家项目制定了各自国家的重点研究领域,采用了先进的科学方法解决当地遗传资源保存和利用中的问题。地区办事处和其它组织共同主办了若干培训班。这个地区组为了在该地区实现国际植物遗传资源委员会的目标,协助开展了以下三个区域性的协作网的活动——中美洲植物遗传资源协作网,安第斯地区植物遗传资源协作网,亚马逊地区植物遗传资源协作网。这些协作网是由国际植物遗传资源委员会和泛美农业合作研究所共同倡议发起的,并和其它国家和国际机构紧密合作。

欧洲组:根据联合国粮农组织植物遗传资源委员会的建议,1992年中期,联合国粮农组织和国际植物遗传资源委员会共同组织一个专门工作小组,调查东欧遗传资源收集品的安全问题。一个由捐助国代表们参加的会议一致认为,有必要确保及时通报紧急情况。截止到1992年底,一些国家和联合国发展计划署对此很感兴趣,并把援助独联体和东欧国家作为支持这一活动的开端。国际植物遗传资源委员会同意作为执行机构参与行动。

1992年,国际植物遗传资源委员会更加重视不同基因源,尤其是那些受到遗传侵蚀威胁的基因源的收集。国际植物遗传资源委员会和国家项目合作,从各地,尤其从热带和亚热带地区收集了3,000多份饲草、禾谷类作物、食用豆类、果用和茎用作物以及果树遗传资源的样品。

为了研究菜豆(*Phaseolus vulgaris*)和豇豆(*Vigna unguiculata*)这两个种的遗传资源,1992年完成了一个鉴别出这两个种易变的和可变量性减退的DNA标记的项目。该项目的研究结果着重地显示出这两个种的野生近缘种在拓宽现有品种遗传基础的育种工作中的潜在价值。

国际植物遗传资源委员会与其它国家和机构合作在巴西组织召开了关于核心收集品的国际研讨会。该研讨会确定了一些重要的课题,例如发展更多类型作物的核心收集品,以及在采集遗传资源收集品中利用核心收集品方法的途径问题。

综合项目

遗传多样性

遗传资源
保存利用

国际植物遗传资源委员会继续支持改进顽拗型种子物种和无性系繁殖作物中期和长期离体保存技术的研究。

一个由国际植物遗传资源委员会资助,由马来西亚佩唐(Pertanian)大学进行的在液态氮中保存油棕和可可切割胚胎的研究项目,不断传来令人高兴的结果。国际植物遗传资源委员会还资助了几个有关低种子含水量对种子寿命和种子遗传稳定性影响的研究项目。

联合国粮农组织和国际植物遗传资源委员会合作,旨在制订种质资源安全交流技术指南的项目,又完成了甘蔗和椰子的草稿。已经着手准备编写小果类果树种质资源安全交流的手册。

完善制定了甘薯黄化矮缩病毒快速检测的方法,这将有利于甘薯种质的交流。

1992年召开了椰子遗传资源协作网指导委员会的第一次会议,决定建立一个国际数据库。十三个来自木薯国家项目的代表同意着手建立一个木薯国际协作网,该协作网的实施将按地区进行。大麦核心收集品委员会采纳了前欧洲大麦核心收集品专门工作小组的方式,国际大麦核心收集品保存库可望于1995年完成。

资料汇编、
信息和服务

由于国际植物遗传资源委员会的总部在当地设置了通讯网络系统,从而提高了管理和交换信息资料的能力。国际植物遗传资源委员会在资料分析中扩大了地理信息系统的利用。制定资料汇编自学指南的合作项目已近完成。另外一个合作项目也获得了成果,出版了第一、二、三期植物遗传资源摘要。国际植物遗传资源委员会出版了20多种新书刊。

国际植物遗传资源委员会处于植物遗传资源公众舆论的前沿,积极参与“联合国环境和发展大会”以及“全球论坛”的活动,并代表国际农业研究磋商小组参加了上述两个大会。

在这一年里,国际植物遗传资源委员会提供了短期的、单项的以及硕士学位的培训机会,一个重要的改进是划地区进行研究生的培训,以便更好地满足国家项目的需要。

合作活动

应国际农业研究磋商小组的要求,国际植物遗传资源委员会撰写了关于植物遗传资源共同战略的讨论稿。所提战略中最重要的部分是:加强国际农业研究磋商小组所属各中心在全球植物遗传资源保存和利用体系中的作用;按生态地区进行地区性重要作物遗传资源的研究;以及在国际农业研究磋商

小组内部加强植物遗传资源工作的合作。

国际植物遗传资源委员会和粮农组织在技术援助项目制定方面继续合作，为地区项目的实施提供了咨询服务。粮农组织和国际植物遗传资源委员会正在为促进粮农组织长期保存库网络和国际植物遗传资源委员会长期保存库网络的合并而努力。国际植物遗传资源委员会鼓励国家和国际基因库加入粮农组织的基因库网络。粮农组织和国际植物遗传资源委员会的专家顾问小组提出了基因库的标准，该标准交粮农组织的植物遗传资源委员会 (The Commission on Plant Genetic Resources) 认可。双方继续在森林遗传资源方面进行密切的合作。

粮农组织

1992年国际植物遗传资源委员会加强了与非政府组织的联系。国际植物遗传资源委员会的代表与非洲以及世界各地的一些非政府组织的代表在内罗毕会面，交换了各自活动的信息，并确定了今后合作的领域。国际农业研究磋商小组开始了各中心之间的磋商过程，并对非政府组织的政策，如知识产权的保护以及开展技术合作的可能性感兴趣。在哥伦比亚和泰国的地区会议上对未来合作的领域进行了讨论。为了推进磋商的过程，在加拿大召开了一次会议，讨论磋商的确切目标和改进各中心与非政府组织间的联系。

非政府组织

国际植物遗传资源委员会派了一个人数不多的代表团代表国际农业研究磋商小组参加了联合国环境与发展大会有关生物多样性方面的活动。作为一个国际机构，国际植物遗传资源委员会被允许以观察员身份参加了正式的外交会议。在主会场设立了国际农业研究磋商小组办公室，国际植物遗传资源委员会也在全球论坛设立了一个展台。

联合国
环境和发展
大会

联合国环境署将为生物多样性公约设立临时秘书处，国际植物遗传资源委员会与该署建立了联系，以利于进一步贯彻和实施公约的有关规定。这个机构设立了一个内部的联合国环境和发展大会联络小组以处理有关事宜。

أهم أحداث 1992

أضاف ممثلو ست حكومات توقيعهم على اتفاقية إنشاء المعهد الدولي للمصادر الوراثية النباتية (IPGRI) في عام ١٩٩٢ بصفتها مؤسسة مستقلة تابعة للمجموعة الإستشارية للبحوث الزراعية الدولية (CGIAR). وقد أحرز تقدم ملحوظ بشأن تصديق الحكومة الإيطالية على الإتفاقيات المتعلقة بالتأسيس والمقر الرئيسي ومع نهاية عام ١٩٩٤، يُتوقع أن تتوقف أعمال المجلس الدولي للمصادر الوراثية النباتية (IBPGR)، ليحل محله المعهد الدولي، الذي سيتخذ نظراً وتوجهاً جديدين وفي ١٩٩٢ اتخذت الخطوات اللازمة، لضمان عملية انتقال سهلة، ووضعت اللامسات الأخيرة على استراتيجية المعهد الدولي للمصادر الوراثية النباتية "التنوع للتنمية".

شرع المجلس الدولي في تنفيذ استراتيجية المعهد الدولي في آذار/مارس و نيسان/أبريل ١٩٩٢ وتصف الاستراتيجية برنامجاً واحداً مترابطاً لتحقيق أهداف المعهد الاستراتيجية الأربعة وبغية تنفيذ هذا البرنامج، اعتمد المعهد ونفذ برنامجاً مؤلفاً من ثمان مجموعات في عام ١٩٩٢، تُعنى خمس منها بالأنشطة الإقليمية في حين تُعنى المجموعات الثلاث الأخرى بموضوعات متخصصة

أنشطة البرنامج

ركزت مجموعة افريقيا جنوب الصحراء الكبرى على دعم تطوير البرامج الوطنية في المنطقة وشكلت رسمياً جميع بلدان المنطقة تقريباً برنامجاً للمصادر الوراثية النباتية وعقدت حلقة بحث بعنوان "حماية المصادر الوراثية للمحاصيل التقليدية في افريقيا" ضمت ممثلين عن وكالات الأمم المتحدة، ومراكز البحوث الزراعية الدولية، وبرامج المصادر الوراثية النباتية الوطنية، ومنظمات غير حكومية فضلاً عن المزارعين وزراعي الأسماب.

المجموعات الإقليمية مجموعة افريقيا جنوب الصحراء الكبرى

نقل المكتب الإقليمي لهذه المجموعة إلى مقر المركز الدولي للبحوث الزراعية في المناطق الجافة (إيكاردا) في سورية خلال عام ١٩٩٢ وقد أنشئت شركة غربي آسيا وشمال افريقيا للمصادر الوراثية النباتية بمشاركة ١٣ بلداً في المنطقة بالتعاون مع إيكاردا والمركز العربي لدراسات الأراضي القاحلة والمناطق الجافة وسورية، ومنظمة الأغذية والزراعة للأمم المتحدة (FAO - فاو) وسيعمل المكتب الإقليمي مثابة أمانة للشبكة وشكلت لجنة لتحديد المشكلات المشتركة كما شكلت ست مجموعات عمل. وقام رئيس المجموعة الإقليمية بزيارة عدد من البرامج الوطنية لتقديم المشورة العلمية والفنية

مجموعة غربي آسيا وشمال افريقيا

باشر المكتب الإقليمي الجديد في سنعافورة أعماله في عام ١٩٩٢ إثر وصول رئيس المجموعة والمسؤول عن التنوع الوراثي وحفظ المصادر الوراثية وبدأ العمل لوضع منهجيات لتقييم احتياجات البرنامج الوطني وقام العاملون في المكتب بزيارة البلدان والمؤسسات في المنطقة للمساعدة في تطوير البرامج الوطنية. وعقد برنامجاً تحت إقليمان للمصادر الوراثية - اللجنة الإقليمية لجنوب شرقي آسيا ومنسقو المصادر الوراثية لجنوبي آسيا - استشارات في ١٩٩٢ وسعت الإستشارات إلى تعزيز إدارة واستخدام المصادر الوراثية النباتية بين البلدان الأعضاء. وعقدت دورتان إقليميتان قصيرتان في ١٩٩٢. كما صدر عددان من النشرة الإعلامية الإقليمية لآسيا والمحيط الهادي من مكتب المجلس الدولي في كل من دلهي وبكين

مجموعة آسيا والمحيط الهادي وأقيانوسيا

مجموعة الأمريكيتين

عملت مجموعة الأمريكيتين التي تعززت بصورة كبيرة في ١٩٩٢، على تقديم العمون للبرامج الوطنية في تحديد أولوياتها البحثية، وتطبيق السبل العلمية الحديثة لحل مشكلات حفظ الموارد الوراثية المحلية واستخدامها. وقد رعى المكتب الإقليمي عدداً من الدورات التدريبية بالتعاون مع منظمات أخرى. وقد ساعدت المجموعة في إنشاء ثلاث شبكات تحت أقاليمية لتحقيق أهداف المجلس الدولي في المنطقة شبكة أمريكا الوسطى للمصادر الوراثية النباتية وشبكة الأنديز للمصادر الوراثية النباتية، وشبكة الأمازون للمصادر الوراثية النباتية ويتم رعاية الشبكات بالإشتراك مع المعهد الدولي للتعاون الزراعي بالإضافة إلى تعاون وثيق مع مؤسسات ومعاهد وطنية ودولية أخرى

مجموعة أوروبا

عقب توصية قدمتها لجنة منظمة الأغذية والزراعة للأمم المتحدة (FAO - فارو) بشأن المصادر الوراثية النباتية، نظمت فارو والمجلس الدولي بعثة مشتركة للإشراف على أمن عمليات جمع الأصول الوراثية في أوروبا الشرقية في منتصف ١٩٩٢. وقد وافق اجتماع حضره ممثلو البلدان المانحة على الحاجة إلى ضمان التصدي لحالات الطوارئ بسرعة وفي نهاية ١٩٩٢، عبّرت بلدان عديدة وبرنامج الأمم المتحدة الإنمائي عن عميق اهتمامها في دعم هذه المبادرة لمساعدة كومنولث الدول المستقلة وبلدان أوروبا الشرقية ووافق المجلس الدولي للعمل بصفة وكالة منفذة.

المجموعات المتخصصة

التنوع الوراثي

ركز المجلس الدولي على جمع المجموعات الوراثية المتنوعة في عام ١٩٩٢ ولأسيما تلك المهددة بالإنقراض الوراثي وبالإشتراك مع البرامج الوطنية تم جمع ما يزيد على ٣٠٠٠ عينة من محاصيل الأعلاف والحبوب والبقوليات الحبية، والجذور والدرنات والفواكه وخاصة من المناطق الإستوائية وشبه الإستوائية.

تمكّن مشروع اكتمل في ١٩٩٢ من تحديد واسمات التغيير للحمض النووي د ن. أ. (DNA) في الفاصولياء (*Phaseolus*) واللوبياء (*avigna maciculata*) لدراسة المصادر الوراثية لهذين النوعين وأكدت الدراسات على قبة الأقارب البرية لهذين النوعين في أعمال التربية بغية توسيع القاعدة الوراثية للأصناف الحالية.

شارك المجلس الدولي في تنظيم حلقة دراسية دولية في البرازيل حول تنمية المجموعات الوراثية الرئيسية. وتمكنت الحلقة الدراسية من تحديد عدد من الموضوعات البحثية التي تنصدر سلم الأولويات، مثل تنمية المجموعات الرئيسية في طائفة أوسع من أنماط المحاصيل والوسائل التي يمكن من خلالها اتباع أسلوب المجموعات الرئيسية في ضم مجموعات الأصول الوراثية.

حفظ الأصول الوراثية

واستخدامها

واصل المجلس الدولي دعم البحوث الرامية إلى تحسين تقنية الحفظ المخبرية المتوسطة والطويلة الأجل للمحاصيل التي تنتج البذور المستعنة أو النباتات المتكاثرة.

أعطى مشروع يموله المجلس الدولي للمصادر الوراثية النباتية في جامعة Universiti Pertanian Malaysia نتائج مشجعة لحفظ الأجنة المستأصلة لزيت

النخيل والكاكاو في نتروجين سائل. ودعم المجلس الدولي عدة مشروعات حول تأثير محتوى رطوبة البذور المتدنية جداً على الإستقرار الوراثي للبذور وبقائها.

انتهى البرنامج المشترك بين منظمة الأغذية والزراعة والمجلس الدولي من وضع التوجيهات الإرشادية الفنية لنقل الأصول الوراثية بطريقة آمنة، من وضع مسودة تتعلق بقصب السكر وجوز الهند. وتم وضع توجيهات إرشادية للأصول الوراثية المتعلقة بالفاكهة الصغيرة.

تم تطوير طريقة سريعة لأخذ مُعامل فيروس التقزم الشاحب في البطاطا الحلوة من شأنها أن تسرع في حركة الأصول الوراثية للبطاطا الحلوة.

عُقد أول اجتماع للجنة التوجيهية لشبكة المصادر الوراثية لجوز الهند في ١٩٩٢، واتخذت الخطوات لإنشاء قاعدة بيانات دولية. ووافق ١٣ ممثلاً من برامج الكسافا الوطنية على إنشاء شبكة دولية للكسافا، ستنفذ على الصعيد الإقليمي. وصاقت لجنة مجموعة الشعير الرئيسية على أسلوب فريق عمل مجموعة الشعير الرئيسية الأوروبية السابقة. ومن المزمع أن تتوافر مجموعة الشعير الدولية الرئيسية بحلول عام ١٩٩٥.

تحسنت قدرة المجلس الدولي في تداول المعلومات وتبادلها بعد إقامة شبكة محلية في المقر الرئيسي. وتوسّع المجلس الدولي في استخدام نظم المعلومات الجغرافية في تحليل البيانات. ويوشك مشروع مشترك لوضع دليل توثيقي للتعليم الذاتي على الإنتهاء. وأسفر نشاط مشترك آخر عن إصدار الأعداد الثلاثة الأولى من ملخصات المصادر الوراثية النباتية. وأصدر المجلس الدولي ما يزيد على ٢٠ عنواناً جديداً.

التوثيق والمعلومات والتدريب

وعلى صعيد نشر التوعية العامة، فقد شارك المجلس الدولي في مؤتمر الأمم المتحدة حول البيئة والتنمية و "المنبر العالمي" للمنظمات غير الحكومية ممثلاً في كليهما للمجموعة الإستشارية للبحوث الزراعية الدولية.

بالإضافة إلى تقديم دورات قصيرة ودورات فردية أخرى للحصول على درجة الماجستير خلال العام، أحرز المجلس الدولي خطوات هامة في تحديد الأقاليم بالنسبة لدورات الدراسات العليا وذلك للإيفاء بمتطلبات البرامج الوطنية على نحو أفضل.

بناء على طلب المجموعة الإستشارية، أعد المجلس الدولي ورقة مناقشة حول استراتيجية مشتركة للمصادر الوراثية النباتية. وتمثل أهم عناصر الإستراتيجية المقترحة في تعزيز دور مراكز المجموعة الإستشارية في النظام العالمي لحفظ المصادر الوراثية واستخدامها، واتباع الأساليب البيئي الإقليمي للمصادر الوراثية للمحاصيل ذات الأهمية الإقليمية أو المحلية، وزيادة التنسيق في أبحاث المصادر الوراثية النباتية للمجموعة الإستشارية.

الأنشطة المشتركة

واصل المجلس الدولي ومنظمة الأغذية والزراعة (فاو - FAO) تعاونهما على صياغة مشروع لتقديم المساعدة الفنية وكذلك خدمات المشورة لتنفيذ المشروعات الميدانية. وتعمل فاو (FAO) والمجلس الدولي لدمج شبكة قاعدة

منظمة الأغذية والزراعة (فاو - FAO)

المجموعات التابعة للغار وشبكة قاعدة المجموعات التابعة للمجلس الدولي. وشجّع المجلس الدولي بنوك المورثات الوطنية والدولية لضم مجموعاتها إلى شبكة فاو (FAO). وقد أوصت لجنة استشارية مشتركة للخبراء بين فاو والمجلس الدولي معايير البنك الوراثي لكي تصادق عليه لجنة المصادر الوراثية النباتية وواصلت المؤسسات الأبحاث المتعلقة بمصادر الغابات الوراثية.

المنظمات غير الحكومية

زاد المجلس الدولي جهوده لتعزيز علاقاته مع المنظمات غير الحكومية خلال ١٩٩٢. واجتمع ممثلو المجلس الدولي وعدد من المنظمات غير الحكومية من أفريقيا ومن أنحاء العالم في نيروبي لتبادل المعلومات المتعلقة بأنشطتها وتحديد مجالات التعاون المحتملة وبدأت المجموعة الإستشارية عملية إستشارية بين مراكزها والمنظمات غير الحكومية المهتمة حوز قضايا السياسات من قبيل حماية الملكية الفكرية فضلاً عن إمكانيات التعاون الفني. وتم بحث مجالات التعاون في المستقبل في اجتماعات إقليمية في كولومبيا ونياندا. وبغية تسهيل عملية الإستشارة، عقد اجتماع في كندا لبحث أهداف الإستشارات وتحسين الإتصالات بين المراكز والمنظمات غير الحكومية.

مؤتمر الأمم المتحدة حول

البيئة والتنمية (UNCED)

مثل وفد صغير من المجلس الدولي المجموعة الإستشارية لبحث قضايا التنوع الحيوي في مؤتمر البيئة والتنمية الذي عقدته الأمم المتحدة وبصفته منظمة دولية، دعي المجلس الدولي بصفة مراقب في الإجتماعات الدبلوماسية الرسمية. وأقيم مكتب للمجموعة الإستشارية في الموقع الرئيسي لمؤتمر قمة الأرض، ونظم المجلس الدولي معرضاً في المنبر العالمي.

اتصل المجلس الدولي ببرنامج الأمم المتحدة للبيئة، الذي سيوفر الأمانة العامة المؤقتة لإتفاقية التنوع البيولوجي، وللمساعدة في وضع الإتفاقية وتنفيذها. وأقام المجلس مجموعة ارتباط داخلية مع UNCED لمتابعة هذه القضايا.

Höhepunkte des Jahres 1992

Vertreter von fünf weiteren Regierungen unterzeichneten 1992 eine Vereinbarung zur Errichtung des Internationalen Institutes für Pflanzengenetische Ressourcen (IPGRI) als unabhängige Institution der CGIAR. Bedeutende Fortschritte wurden erzielt bei der Ratifizierung der Vereinbarungen über die Errichtung des IPGRI und seiner Zentrale in Rom durch die italienische Regierung. Im Jahre 1994 wird das IBPGR seine Tätigkeit höchstwahrscheinlich eingestellt haben und durch das IPGRI ersetzt worden sein. Ein neuartiges Institut mit einer neuen Orientierung. 1992 begannen die Vorbereitungen zu einem reibungslosen Übergang, und die Strategie des IPGRI 'Diversity for Development' wurde fertiggestellt.

Programm-Aktivitäten

Das IBPGR begann mit der Implementierung der IPGRI-Strategie im März/April 1992. Die Strategie stellt ein umfassendes zusammenhängendes Programm zur Erfüllung der vier strategischen institutionellen Ziele des IPGRI dar. Zur Realisierung dieses Programms gab sich das Institut 1992 eine aus acht Programmgruppen bestehende Struktur, von denen fünf regional und drei thematisch orientiert sind, und implementierte sie.

Regionale Gruppen

Gruppe Sub-saharisches Afrika

Die Gruppe Sub-saharisches Afrika konzentrierte sich auf die Bereitstellung von technischer und fachlicher Unterstützung für die Entwicklung nationaler Programme in der Region. Fast alle Länder der Region haben formal Programme für pflanzengenetische Ressourcen etabliert. Das IBPGR finanzierte eine von nationalen Wissenschaftlern organisierte Sammelreise in die ariden und semi-ariden Gebiete Tansanias. Ein von mehreren Organisationen unterstütztes Seminar über 'Safeguarding the Genetic Resources of Africa's Traditional Crops' führte Vertreter von UN-Organisationen, internationalen landwirtschaftlichen Forschungszentren, nationalen Programmen pflanzengenetischer Ressourcen, nichtstaatlichen Organisationen, sowie Bauern und Laienbotaniker zusammen.

Gruppe Westasien und Nordafrika

Das Netz für Pflanzengenetische Ressourcen Westasien und Nordafrika wurde 1992 unter Beteiligung von 13 Ländern der Region sowie anderer Gruppen ins Leben gerufen. Das regionale IBPGR-Büro wird als Sekretariat des Netzes dienen. Ein Komitee wurde gegründet, um gemeinsame Probleme zu identifizieren, und sechs Arbeitsgruppen wurden berufen.

Gruppe Asien, Pazifik und Ozeanien

IBPGR-Mitarbeiter besuchten Länder und Institutionen in der Region, um die Entwicklung nationaler Programme zu unterstützen. Drei Kurzlehrgänge auf regionaler Grundlage fanden 1992 statt. Zwei Ausgaben des Regionalen Newsletters für Asien und den Pazifik wurden 1992 durch das IBPGR-Büro in Delhi publiziert.

Gruppe Amerika

Die Gruppe hat drei sub-regionale Netze gebildet, um die Ziele des IBPGR zu pflanzen genetischen Ressourcen in der Region zu verwirklichen. Das Zentralamerikanische Netz für Pflanzengenetische Ressourcen wird Mittelamerika abdecken; das Andine Netz für Pflanzengenetische Ressourcen die Andenregion; und das Amazonische Netz für Pflanzengenetische Ressourcen das Amazonasbecken. Die drei vorgeschlagenen Netze werden gemeinsam vom IBPGR und dem Interamerikanischen Institut für Zusammenarbeit in der Landwirtschaft gefördert.

Gruppe Europa

Entsprechend einer Empfehlung der Kommission für Pflanzengenetische Ressourcen der FAO vom November 1991 organisierten FAO und IBPGR eine gemeinsame Mission zur Begutachtung der Gefährdung der Sammlungen pflanzengenetischer Ressourcen in Osteuropa. Vertreter der Geberländer kamen in einem Treffen überein, daß es erforderlich sei, auf Notsituationen mit Sicherheit frühzeitig aufmerksam zu machen. Ende 1992 hatten mehrere Länder und das UNDP ein starkes Interesse daran bekundet, diese Initiative zu unterstützen, und das IBPGR erklärte sich bereit, als ausführendes Organ aufzutreten.

Netze für Fruchtarten

Das erste Treffen des Lenkungsausschusses des Netzes für Genetische Ressourcen der Kokosnuß wurde 1992 abgehalten und maß dem Aufbau einer internationalen Datenbank hohe Priorität bei. 13 Vertreter von nationalen Maniok-Programmen verständigten sich darüber, ein internationales Maniok-Netz ins Leben zu rufen. Die Strategie dieses globalen Netzes wird auf regionaler Basis implementiert werden. Das Core-Collection-Komitee der Gerste billigte das Herangehen der früheren Projektgruppe Europäische Core-Collection der Gerste. Die internationale Core Collection der Gerste sollte ab 1995 verfügbar sein.

Thematische Gruppen

Erhaltung und Nutzung von genetischen Ressourcen

Ein vom IBPGR finanziertes Projekt an der Universiti Pertanian Malaysia lieferte weitere ermutigende Ergebnisse zur Erhaltung isolierter Embryonen von Ölpalme und Kakao in flüssigem Stickstoff. Ein Projekt in Indien untersuchte die biologischen Mechanismen, die der Rekalzitranz der Samen von Tee, Kakao und Jackfrucht zugrundeliegen. Das IBPGR unterstützte mehrere Projekte, die auf ein besseres Verständnis der Wirkung sehr niedriger Samenfeuchte auf die Lebensdauer und die genetische Stabilität von Samen abzielen.

Das IBPGR setzte die Unterstützung für Forschungen zur Verbesserung der Technologie der mittel- und langfristigen In-vitro-Erhaltung für rekalzitranz-samenbildende und klonal vermehrte Kulturpflanzenarten fort.

Ein breites Spektrum von Kryopräservations-Techniken wurde mit Gruppen in Deutschland an der Kartoffel erprobt. Die mittelfristige In-vitro-Erhaltung von Musa durch die slow-growth-Methode ist jetzt Routine, und langfristige Kryopräservierung steht in Aussicht. Alle In vitro-Prozeduren für Musa werden bisher durch die somaklonale Variation behindert. Forschungen zur Entwicklung einer molekularbiologischen, auf einer RAPD-Technik (random amplified polymorphic DNA) basierenden Methode zur Erkennung von Varianten in einem frühen Stadium wurden unterstützt.

für einen sicheren Transfer von genetischen Ressourcen stellte den Entwurf von zwei Ergänzungen der Serie, für Zuckerrohr und Kokosnuß, fertig. Ein Treffen war der Entwicklung solcher Richtlinien für genetische Ressourcen bestimmter Obstarten gewidmet.

Genetische Diversität

Für Genepools hoher Diversität, speziell von solchen, die von genetischer Erosion bedroht sind, machte sich das IBPGR eine konzentriertere Sammlungsstrategie zu eigen. In Partnerschaft mit nationalen Programmen wurde eine beträchtliche Anzahl von Mustern von Futterpflanzen, Getreiden, Körnerleguminosen, Wurzel- und Knollenfrüchten sowie Obstarten gesammelt, hauptsächlich aus tropischen und subtropischen Regionen.

Ein 1992 abgeschlossenes Projekt führte zur Identifikation von variablen und hypovariablen DNA-Markern bei *Phaseolus vulgaris* und *Vigna unguiculata*, die in einer Untersuchung genetischer Ressourcen der beiden Arten benutzt werden sollen. Die Ergebnisse heben den potentiellen Wert der wildwachsenden Verwandten dieser beiden Arten für die Züchtungsarbeit hervor, insbesondere zur Erweiterung der genetischen Basis der heutigen Sorten.

Das IBPGR beteiligte sich an der Organisation eines internationalen Workshops in Brasilien über die Entwicklung von Core Collections. Das Workshop wies eine Anzahl von Aufgaben hoher Priorität aus, zum Beispiel die Entwicklung von Core Collections für ein breiteres Spektrum von Kulturpflanzentypen (klonal vermehrte, fremdbefruchtende, usw.), die Art und Weise, in welcher Evaluierungs- und qualitative Daten am besten kombiniert werden können, die hierarchische Strukturierung der Diversität, und die Art und Weise, in welcher ein Core-Collection-Ansatz am besten zum Aufbau von Sammlungen pflanzen genetischer Ressourcen genutzt werden kann.

Dokumentation, Information und Ausbildung

Die Möglichkeiten des IBPGR zur Behandlung und zum Austausch von Informationen wurden durch die Installation eines lokalen Rechnernetzes in der Zentrale verbessert. Die Daten, die zur Herstellung der IBPGR-Verzeichnisse von Sammlungen pflanzen genetischer Ressourcen benutzt werden, wurden grundlegend überarbeitet. Das IBPGR rückte zu einer zweiten Stufe bei der Nutzung von geografischen Informationssystemen zur Datenanalyse auf. Drei neue Deskriptorenlisten wurden veröffentlicht, und die Arbeit an weiteren 11 schritt voran. Ein kollaboratives Projekt zur Entwicklung eines Dokumentations-Handbuches zum Selbststudium näherte sich seinem Abschluß. Ein weiteres Kooperationsvorhaben erbrachte seine ersten Früchte mit der Publikation der ersten drei Ausgaben der Plant Genetic Resources Abstracts. Das IBPGR veröffentlichte mehr als 20 neue Titel. Im Bereich der öffentlichen Bewußtseinsbildung war das IBPGR sowohl in die UN-Konferenz zur Umwelt und Entwicklung (UNCED) als auch in das Globale Forum stark einbezogen und vertrat das CGIAR-System auf beiden Veranstaltungen. Auf dem Gebiet der Ausbildung wurde ein bedeutender Schritt in Richtung einer Regionalisierung der postgradualen Ausbildung getan, um den Bedürfnissen der nationalen Programme besser entgegenzukommen.

Kollaborative Aktivitäten

CGIAR/IARCs

Auf Anforderung durch das CGIAR bereitete das IBPGR einen Diskussionsbeitrag zu einer gemeinsamen Strategie für die pflanzen genetischen

Nutzung von genetischen Ressourcen; die Anwendung eines öko-regionalen Ansatzes bei den Zentren, die mit Kulturpflanzenarten von regionaler oder lokaler Bedeutung arbeiten; und die Verstärkung der Koordinierung der Arbeiten auf dem Gebiet der pflanzen genetischen Ressourcen.

FAO

Seit der 1990 erfolgten Unterzeichnung eines 'Memorandum of Understanding on Programme Cooperation' haben IBPGR und FAO bei der Projektausarbeitung für technische Hilfe und auch bei der Bereitstellung von Konsultationsdiensten für die Implementierung von Feldprojekten zusammengearbeitet. Zwei gemeinsame Programmplanungstreffen wurden 1992 abgehalten. Unterkomitees wurden für spezifische Gebiete der Zusammenarbeit gebildet.

Sowohl FAO als auch IBPGR arbeiten daran, das FAO-Netz der Basiskollektionen und das IBPGR-Netz der Basiskollektionen zu vereinigen. Das IBPGR hat nationale und internationale Genbanken angeregt, sich in das FAO-Netz einzubringen. Eine gemeinsame FAO/IBPGR-Expertenkonsultation empfahl Genbank Standards zur Bestätigung durch die Kommission für pflanzen genetische Ressourcen. FAO und IBPGR untersuchten die Möglichkeit, eine Permafrost-Einrichtung--die Internationale Samenbank auf Svalbard--als zusätzlichen Sicherheitsspeicher zu nutzen. FAO und IBPGR setzten die Publikation des vierteljährlich erscheinenden FAO/IBPGR Plant Genetic Resources Newsletter fort. Die FAO arbeitete intensiv mit dem IBPGR auf dem Gebiet der forstlichen genetischen Ressourcen zusammen.

Nichtstaatliche Organisationen

Das IBPGR verstärkte 1992 seine Bemühungen, Verbindungen zu nichtstaatlichen Organisationen (NGOs) aufzubauen. Vertreter des IBPGR und einer Reihe von afrikanischen NGOs trafen sich in Nairobi, um Informationen über ihre Aktivitäten auszutauschen und Gebiete einer möglichen Zusammenarbeit zu identifizieren. Die CGIAR begann einen Prozeß von Konsultationen zwischen ihren Zentren und interessierten NGOs sowohl über Verfahrensfragen als auch über die technische Zusammenarbeit auf dem Niveau von Kontinenten. Das erste Treffen einigte sich über Bereiche der künftigen Zusammenarbeit. Zur Förderung des Konsultationsprozesses wurde ein Treffen in Kanada durchgeführt, um die präzisierten Ziele der Konsultationen zu diskutieren und die Kommunikation zwischen den beiden Gruppen zu verbessern.

UNCED

Eine kleine Delegation des IBPGR vertrat die CGIAR zu Fragen der Biodiversität auf dem Weltgipfel. Als internationale Organisation war das IBPGR als Beobachter zu den formalen diplomatischen Treffen zugelassen. Ein CGIAR-Büro wurde am Hauptort des Gipfels betrieben. Das IBPGR errichtete auch einen Ausstellungsstand beim Globalen Forum, wo Mitglieder der Delegation täglich Hunderte von Besuchern empfangen.

Das IBPGR nahm Kontakt mit dem UNEP auf, das das Interimssekretariat für die Konvention über biologische Diversität stellen wird, um bei der weiteren Entwicklung und Implementierung der Konvention mitzuwirken. Das IBPGR analysierte die möglichen Konsequenzen der Konvention für die internationale Zusammenarbeit auf dem Gebiet der pflanzen genetischen Ressourcen.

1992年ハイライト

国際植物遺伝資源研究所 (IPGRI) を農業研究協議グループ (CGIAR) 傘下の独立機関として設立するための協定に、さらに6カ国の代表が1992年に署名をした。イタリー政府による設立及び本部設置に関する協定の批准へ向けての動きは顕著な進展を遂げた。多分1993年の年末までにはIBPGRは活動をやめ、新たな装いと方向を持った研究所IPGRIに置きかわるだろう。1992年には円滑な移行を確実にするための段階が踏まれた。IPGRIの戦略“Diversity for Development”が完成した。

プログラム活動

IBPGRは1992年3~4月にIPGRIの戦略の実行にはいった。戦略は研究所の4つの戦略目的を達成するための単一の整合性のあるプログラムを規定している。このプログラムを遂行するため、IBPGRは1992年に8つのプログラムグループからなる組織構成を採用し、活動にはいった。5つは地域活動に関するもので3つは分野別トピックに関するものである。

地域グループ

サブサハラアフリカグループ

サブサハラアフリカグループはこの地域の国家的プログラムの進展を支持することに専念した。この地域のほとんどすべての国が植物遺伝資源のプログラムをすでに正式に確立した。“アフリカ伝統作物の遺伝資源の保全”についてのセミナーは国連諸機関、国際農業研究センター、国家的植物遺伝資源プログラムの代表、NGO、農家及び植物学者を一堂に会せしめた。

西アジア北アフリカグループ

地域事務所が1992年にシリアにある国際乾燥地農業研究センター (ICARDA) に移された。植物遺伝資源に関する西アジア及び北アフリカネットワークこの地域の13カ国の参加、さらにICARDA、乾燥地帯・乾燥地研究のためのアラブセンター、シリア、国連食糧農業機関 (FAO) の協力のもとに設立された。地域事務所はこのネットワークの事務局をつとめる。共通の課題を設定するため委員会がつくられ、6つのワーキンググループが設置された。地域グループリーダーは科学的及び技術的助言を行うため数多くの国家的プログラムを訪れた。

アジア・太平洋・大洋州グループ

グループリーダー及び遺伝的多様性/保全担当職員を迎え、1992年にシンガポールの新しい地域事務所が活動を開始した。国家的プログラムが必要とする事項を評価する手法を開発するための業務が始まった。職員は国家的プログラム確立を支援するため地域内の国々や研究所を訪れた。植物遺伝資源に関するふたつのサブリージョナルプログラム — 東南アジアのための地域委員会及び南アジア植物遺伝資源調整員集団 — が1992年に協議会をもった。協議会はメンバー国における植物遺伝資源の管理・利用の強化を図った。ふたつの地域的な短期研修コースが1992年に行われた。アジア・太平洋の地域ニュースレターがテリー及び北京事務所より2号刊行された。

アメリカグループ

1992年に顕著に強化されたアメリカグループは、研究の優先度を確立し、在来の遺伝資源保全・利用のため最新の科学的手法を適用することにおいて、国家的プログラムを支援すべく活動した。地域事務所は他の諸機関と共同して数多くの研修コースを後援した。グループはこの地域のIBPGRの目標を達成するため3のサブリージョナルネットワーク確立を支援した。それらは、植物遺伝資源に関する中央アメリカネットワーク、植物遺伝資源に関するアンデス地域ネットワーク、植物遺伝資源に関するアマゾンネットワークである。これらネットワークはインターアメリカン農業協力研究所の共同支援を受けており、またその他の国家的・国際的研究所と密接な協力関係にある。

ヨーロッパグループ

植物遺伝資源に関するFAOコミッションの勧告にしたがい、FAOとIBPGRは1992年なかばに東ヨーロッパにおける収集遺伝資源の安全性を調べるための共同調査団を組織した。資金提供国代表が出席した会議は、切迫した状況への速やかな対処を確保する必要があることについて合意した。1992年末までにいくつかの国と国連開発計画(UNDP)が、CISと東ヨーロッパ諸国援助へのイニシアティブを支持することに強い興味を表明した。IBPGRはその実施機関として行動することに同意した。

分野別グループ

遺伝的多様性

IBPGRは1992年には多様なジーンプール、ことに遺伝的エロージョンの危機にさらされているものの収集に力を注いだ。国家的プログラムによって、とくに熱帯・亜熱帯の牧草、穀類、食用豆類、地下作物及び果樹の3000以上の標品が集められた。

1992年に完了したひとつのプロジェクトは、*Phaseolus* 及び *Vigna unguiculata*

について、これらの種の遺伝資源を研究するための、“variable”あるいは“hypovariable”DNAマーカーを同定した。結果は、これらの種の近縁野生種が現行の品種の遺伝的背景を拡大するのに潜在的価値を持つことを強調した。

IBPGRはコアコレクションの開発に関するブラジルでの国際的ワークショップの組織運営に協力した。このワークショップは数多くの優先度の高い研究課題を同定した。それらは例えば、広範囲の作物の型におけるコアコレクションの開発、コアコレクションの研究を遺伝資源のコレクションの総合化に活用する方法などである。

遺伝資源保存・利用

IBPGRは種子が貯蔵困難な、あるいは栄養繁殖性の植物の中期あるいは長期 *in vitro* 保存技術を改良するための研究を引き続き支援した。

マレーシア農業大学におけるIBPGR資金によるプロジェクトは、油ヤシ及びココアの胚を液体窒素中で保存することについて有望な結果をもたらした。IBPGRは極度の乾燥が種子の寿命と遺伝的安定性におよぼす影響についてのいくつかのプロジェクトを支援した。

遺伝資源安全移動の技術的ガイドラインを作るためのFAO-IBPGR共同プログラムはサトウキビとココヤシについての章を完成した。小果実の果樹類の遺伝資源のためのガイドライン作成の作業も行われた。

サツマイモchlorotic stunt virusの迅速検定法が開発され、これはサツマイモ遺伝資源の移動を促進すると思われる。

ココヤシ遺伝資源ネットワークの運営委員会の第1回会合が1992年にもたれ、国際データベース確立へ向けて歩が進められた。13のキャッサバに関する国家的プログラムの代表が、地域的に実施される国際キャッサバネットワークを発足させることに合意した。オオムキのコアコレクション委員会は、従来からのヨーロッパオオムキコアコレクションタスクフォースの進め方を支持した。国際オオムキコアコレクションは1995年に完成するはずである。

記録、情報及び研修

IBPGRの情報処理・交換の能力は、本部に構内ネットワーク(LAN)が設置されたことにより改善された。IBPGRは地理的情報システムのデータ解析への利用を拡大した。自習できる情報処理ガイドブック開発のための共同プロジェクトは完成に近づいた。もうひとつの共同活動は、植物遺伝資源要約集のはじめの3号の発行をもたらした。IBPGRは20を越える新しい論文を発表した。

広報活動の場面において、IBPGRは国連環境開発会議及びNGO世界フォーラムにいずれもCGIARを代表して参加した。

国家的プログラムの必要性に沿うため、IBPGRは短期コース、個別及びマスターコ

ースによる研修を提供するほか、大学院における研修の地域化へ向けて顕著な動きを示した。

共同活動

CGIARの要請にこたえて、IBPGRは植物遺伝資源に関する共通戦略についての討議資料を作成した。提案された戦略の最も重要な要素は、遺伝資源の保全・利用のための世界的システムにおけるCGIARの役割を強化すること及びCGIARの傘下の植物遺伝資源研究の調整をより強く図ることである。

FAO

IBPGRとFAOは、技術援助のプロジェクト形成及び地域プロジェクトの実施における専門的助言のサービス提供において協力を続けた。FAOとIBPGRは、ヘースコレクションのFAOネットワークとIBPGRネットワークの併合へ向けて作業を行っている。IBPGRは国家的及び国際的ジーンバンクにそれらのコレクションをFAOネットワークに移すよう奨励した。FAO/IBPGRの共同の専門家協議会は植物遺伝資源に関するFAOコミッションにより支持されるジーンバンクの標準を勧告した。両機関は森林の遺伝資源についての活動において緊密な協力を続けた。

NGO

IBPGRは1992年において、非政府機関との結び付きを形成する努力を強めた。IBPGRの代表とアフリカほか世界の数多くのNGOがナイロビに集まり活動についての情報を交換し、協力可能な分野を探った。CGIARは、技術的協力の可能性及び知的所有権保護など政策的な問題について、傘下の研究センターとこうした問題に興味を持つNGOとの間での協議の過程を開始した。将来の協力の分野については、コロンビア及びタイ国における地域会議において論議された。協議をたすけるためにカナダで会議が開かれ、協議の目的が論議され、研究センターとNGOとの間の対話の改善が図られた。

国連環境開発会議 (UNCED)

IBPGRの小さい代表団が国連環境開発会議 (UNCED) の生物的多様性に関する論議においてCGIARを代表した。国際機関のひとつとして、IBPGRは公式な外交会議へのオブサーバとして認められた。サミットのメインサイトにCGIARの事務所が設けられ、IBPGRはグローバルフォーラムに展示のブースを組織した。

IBPGRは会議の将来の発展と事業実施をたすけるため、生物的多様性に関する会議の仮事務局を提供することになっている国連環境計画 (UNEP) と接触した。これらの事項をフォローアップするため、所内にUNCED連絡グループを設けた。