

PN - AAW - 852  
49631



# **IBPGR Programme Structure**

**International Board for Plant Genetic Resources**

**AGPG: IBPGR/86/68**

**INTERNATIONAL BOARD FOR PLANT GENETIC RESOURCES**

**IBPGR PROGRAMME**

**IBPGR Headquarters  
Rome, 1986**

(ii)

The International Board for Plant Genetic Resources (IBPGR) is an autonomous international scientific organization under the aegis of the Consultative Group on International Agricultural Research (CGIAR). The IBPGR was established by the CGIAR in 1974. The basic function of the IBPGR is to promote and coordinate an international network of genetic resources centres to further the collection, conservation, documentation, evaluation and use of plant germplasm and thereby contribute to raising the standard of living and welfare of people throughout the world. Financial support for the core programme is provided by the Governments of Australia, Austria, Belgium, Canada, China, Denmark, France, Federal Republic of Germany, India, Italy, Japan, The Netherlands, Norway, Spain, Sweden, Switzerland, United Kingdom, and the USA as well as the World Bank. FAO provides the Headquarters in Rome.

Citation: IBPGR. 1986. IBPGR Programme Structure  
International Board for Plant Genetic Resources,  
Rome.

IBPGR Headquarters  
Crop Genetic Resources Centre  
Plant Production and Protection Division  
Food and Agriculture Organization of the United Nations  
Via delle Terme di Caracalla, 00100 Rome, Italy

(c) International Board for Plant Genetic Resources, 1986

CONTENTS

	Page
Foreword.....	iv
1. Administration.....	1
2. Technical Services.....	1
3. Global Genetic Resources Network.....	1
4. Germplasm Acquisition.....	2
5. Germplasm Characterization and Evaluation.....	2
6. Training.....	3
7. <u>In Vitro</u> Culture Research.....	3
8. Genetic Diversity Research.....	4
9. Seed Conservation Research.....	5

## FOREWORD

The International Board of Plant Genetic Resources (IBPGR) was set up in 1974. Its mandate is to further the study, collection, preservation, documentation, evaluation, and utilization of the genetic diversity of useful plants for the benefit of people throughout the world. The IBPGR shall act as a catalyst both within and outside the CGIAR system in stimulating the action needed to sustain a viable network of institutions for the conservation of genetic resources of these plants.

The initial action was to establish genetic resource centres that would collaborate worldwide to collect and conserve crop germplasm. This was accompanied by training personnel to staff the network of centres and by defining the scientific standards for their operation. The IBPGR programme has become truly international, spanning countries of all political persuasions and degrees of development.

By the early 1980s a partial network of centres had been designated for long-term seed storage (base collections). Other centres have provided for exchange and use of germplasm (active collections). It became clear that there was also a need for the conservation of vegetatively propagated crops. Clonal repositories (field genebanks and tissue culture collections) are now being established for this purpose. In addition, the range of conserved crops has been extended beyond the initial priority species, and now includes all the food and industrially important crops, along with their wild relatives.

Advice has been sought from the worldwide scientific community through consultation and IBPGR Crop Working Groups. As the programme has evolved in size and scope, the original small Secretariat, affiliated with FAO, has grown into a larger science-oriented staff. The IBPGR is now recognized as a focal scientific body in world plant genetic resource conservation.

The Board of Trustees and its Programme Committee work with the Director and his staff to advise on all aspects of programme planning and execution. This is structured in three sections:

- i) Administration, including planning, programme coordination, finance, publications, and communication.
- ii) Field Programme, including collection, documentation and characterization, training, monitoring standards, germplasm exchange and coordination with national programmes.

- iii) Research Programme, including strategic mission-oriented research in seed physiology; in vitro conservation, pathology and germplasm exchange, ecogeographic studies and patterns of variation (including taxonomy of complex genera), DNA technology, strategic planning of the evaluation of germplasm, seed regeneration and the maintenance of genetic integrity and the distribution and ecology of major pathogens and their pathotypes.

The current activities include nine major programme elements, each with several sub-programmes that contain many individual projects throughout the world.

J. T. Williams  
Director

W. J. Peacock  
Chairman  
Programme Committee

## OUTLINE STRUCTURE AND CONTENT OF IBPGR PROGRAMME

### 1. ADMINISTRATION

Aim: to ensure efficient administration of all IBPGR activities and financial affairs. The programme includes administration of the Board and its Committees, Office of the Director, Personnel, and Finance.

### 2. TECHNICAL SERVICES

Aim: to provide necessary technical support and information to the Board and its staff and to publicize their activities.

#### 2.1 Technical and Scientific Committees

To ensure that the best possible scientific input is available for the implementation and further development of the IBPGR programme.

#### 2.2 Information and Editorial

To pursue a vigorous publication policy informing the world's genetic resources community of both practical and scientific developments.

#### 2.3 Library

To establish and maintain a repository of genetic resources literature.

### 3. GLOBAL GENETIC RESOURCES NETWORK

Aim: To develop a global network of genetic resource centres.

#### 3.1 Development Activities

To create further awareness at the national level of the need for genetic conservation, and to strengthen the global network.

### 3.2 Base Collections in Genebanks

To complete a network of IBPGR-designated base collections for long-term seed conservation of major crops, through (i) the designation of priority crops with duplicate collection storage, (ii) the development of a register of centres which meet the IBPGR international standards, (iii) the improvement of standards in centres which do not meet IBPGR criteria for registration, and (iv) the development of in vitro storage collections.

### 3.3 Active Collections in Genebanks

To establish a network of active genebanks for the multiplication, regeneration, characterization, and medium-storage of designated germplasm collections, as well as to arrange the distribution of germplasm to users.

### 3.4 Data Management and Transfer

To strengthen national capabilities in computerized documentation of germplasm collections (with emphasis on passport and characterization data).

## 4. GERMPLASM ACQUISITION

Aim: To rescue germplasm being threatened by genetic loss or erosion, and to fill gaps in existing collections. This applies especially to landraces/primitive cultivars, and wild and weedy crop relatives. It also includes the responsibility for ensuring the distribution of this material to base collections.

### 4.1 Monitoring of Genetic Erosion

To establish a system to alert IBPGR and national programmes on actual or potential genetic erosion.

### 4.2 Collection of Endangered Germplasm

To organize urgent collecting in emergency situations.

### 4.3 Selective Collecting to Fill Diversity Gaps

To fill diversity gaps in existing collections through the organization of well defined collecting projects.

### 4.4 Facilitation of Germplasm Distribution

To ensure a rapid transfer of germplasm from collecting missions to designated base and active collections having regard to national quarantine regulations.

## 5. GERMPLASM CHARACTERIZATION AND EVALUATION

Aim: To facilitate the processing of data on characterization and evaluation through the development of standardized procedures, and to promote the transfer of this information to users.

### 5.1 Data Acquisition

To tabulate data on characterization and evaluation.

### 5.2 Data Analysis and Application

To arrange for the registration of full passport data on existing accessions in collections; the filling of significant data gaps (by reference to geographical and climatic data bases); the analysis of characterization and evaluation data and the facilitation of its flow to users.

### 5.3 Evaluation Strategy

To develop cost-effective strategies for evaluating genetic variation in collections, in order to promote the use of germplasm in breeding programmes.

## 6. TRAINING

Aim: To promote and develop manpower through training activities to increase conceptual, technical and management skills in genebanks.

### 6.1 Post-Graduate Courses

To organize training courses at a post-graduate level of approximately 12 calendar months leading to a university qualification or its equivalent.

### 6.2 Specialized Short Technical Courses

To develop short specialized training courses in different aspects of genetic conservation.

### 6.3 Individual Training Programmes

To organize training programmes to fit the special needs of individuals working on genetic resources.

### 6.4 Intern Fellowships

To provide research experience for young scientists at centres associated with the IBPGR network.

## 7. IN VITRO CULTURE RESEARCH

Aim: To develop in vitro techniques for the collection, conservation, and exchange of the widest range of genotypes of specific crops which are difficult to conserve using conventional seed storage methods.

### 7.1 Collection and Tissue Culture Technology

To develop suitable in vitro culture techniques, applicable to the widest range of genotypes of specific crops; and to develop cost-effective in vitro collection procedures.

### 7.2 Disease Indexing and Therapy

To develop suitable disease indexing and therapy techniques to facilitate the exchange and storage of disease-free material.

### 7.3 Cryopreservation

To develop suitable procedures for the storage of germplasm of specific crops by cryopreservation.

### 7.4 Genetic Stability

To examine the scientific basis of genetic instability in in vitro systems (under both slow growth and cryopreservation).

### 7.5 Pilot Study for In Vitro Genebanks

To test theoretical assumptions in a pilot study, and subsequently to provide advice on the establishment and management of in vitro genebanks.

## 8. GENETIC DIVERSITY RESEARCH

Aim: To gain a better understanding of the origin, evolution, and variation patterns of crop gene pools.

### 8.1 Species Mapping

To map the distributions of crop gene pools, including their wild relatives.

### 8.2 Ecogeographic Studies

To understand patterns of variation in wild species in relation to ecogeographic factors.

### 8.3 Biochemical Methods

To develop and adapt biochemical techniques, such as isozyme analysis, to determine patterns and ranges of variation within and between populations.

### 8.4 Wild Relatives of Priority Crops

To increase the understanding of genetic systems and the taxonomy of the wild relatives of crop species.

## 9. SEED CONSERVATION RESEARCH

Aim: To establish and implement standards in seed storage that will ensure maintenance of viability and genetic integrity.

### 9.1 Physiology of Stored Seed

To promote research on seed physiology in order to develop improved methods of seed storage.

### 9.2 Genetic Stability

To determine the causes and frequencies of genetic change in seeds during storage.

### 9.3 Dormancy

To study the occurrence, nature, and breaking of seed dormancy, as an aid to improved genebank management.

### 9.4 Regeneration and Genetic Integrity

To increase the understanding of factors affecting the genetic integrity of accessions during seed multiplication.

### 9.5 Non-destructive Disease Indexing

To develop methods of assessing the presence or absence of disease organisms in small seed samples without destroying the seed.