



List of publications

International Plant Genetic Resources Institute



The International Plant Genetic Resources Institute (IPGRI) is an autonomous international scientific organization, supported by the Consultative Group on International Agricultural Research (CGIAR). IPGRI's mandate is to advance the conservation and use of genetic diversity for the well-being of present and future generations. IPGRI's headquarters is based in Rome, Italy, with offices in another 19 countries worldwide. It operates through three programmes: (1) the Plant Genetic Resources Programme, (2) the CGIAR Genetic Resources Support Programme, and (3) the International Network for the Improvement of Banana and Plantain (INIBAP).

The international status of IPGRI is conferred under an Establishment Agreement which, by January 2000, had been signed and ratified by the Governments of Algeria, Australia, Belgium, Benin, Bolivia, Brazil, Burkina Faso, Cameroon, Chile, China, Congo, Costa Rica, Côte d'Ivoire, Cyprus, Czech Republic, Denmark, Ecuador, Egypt, Greece, Guinea, Hungary, India, Indonesia, Iran, Israel, Italy, Jordan, Kenya, Malaysia, Mauritania, Morocco, Norway, Pakistan, Panama, Peru, Poland, Portugal, Romania, Russia, Senegal, Slovakia, Sudan, Switzerland, Syria, Tunisia, Turkey, Uganda and Ukraine.

Financial support for the Research Agenda of IPGRI is provided by the Governments of Australia, Austria, Belgium, Brazil, Bulgaria, Canada, China, Croatia, Cyprus, Czech Republic, Denmark, Estonia, F.R. Yugoslavia (Serbia and Montenegro), Finland, France, Germany, Greece, Hungary, Iceland, India, Ireland, Israel, Italy, Japan, Republic of Korea, Latvia, Lithuania, Luxembourg, Macedonia (F.Y.R.), Malta, Mexico, the Netherlands, Norway, Peru, the Philippines, Poland, Portugal, Romania, Slovakia, Slovenia, South Africa, Spain, Sweden, Switzerland, Turkey, the UK, the USA and by the Asian Development Bank, Common Fund for Commodities, Technical Centre for Agricultural and Rural Cooperation (CTA), European Environment Agency (EEA), European Union, Food and Agriculture Organization of the United Nations (FAO), International Development Research Centre (IDRC), International Fund for Agricultural Development (IFAD), Interamerican Development Bank, Natural Resources Institute (NRI), Centre de coopération internationale en recherche agronomique pour le développement (CIRAD), Nordic Genebank, Rockefeller Foundation, United Nations Development Programme (UNDP), United Nations Environment Programme (UNEP), Taiwan Banana Research Institute (TBRI) and the World Bank.

IPGRI publications are available free of charge to the libraries of genebanks, university departments, research institutions, etc. on request to head of the Editorial Publications Unit. Titles may also be made available to individuals who can show that they have a need for a personal copy of a publication.

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CONTENTS

GENERAL PUBLICATIONS	2
PUBLIC AWARENESS	5
ISSUES IN GENETIC RESOURCES	6
CROP AND TREE GENETIC RESOURCES	8
PROMOTING THE CONSERVATION AND USE OF UNDERUTILIZED AND NEGLECTED CROPS	10
DOCUMENTATION	13
CROPS	14
GENETIC DIVERSITY	15
CONSERVATION AND <i>IN VITRO</i> PRESERVATION	17
TECHNICAL BULLETINS	21
GERMPLASM HEALTH	22
DESCRIPTOR LISTS	24
DIRECTORIES OF GERMPLASM COLLECTIONS	29
REGIONAL MEETINGS	31
PLANT GENETIC RESOURCES in EUROPE	35
EUROPEAN COOPERATIVE PROGRAMME FOR CROP GENETIC RESOURCES NETWORK (ECP/GR)	36
INTERNATIONAL CROP NETWORK SERIES	39
EUROPEAN FOREST GENETIC RESOURCES PROGRAMME (EUFORGEN)	40
UNDERUTILIZED MEDITERRANEAN SPECIES (UMS)	42
INIBAP PUBLICATIONS	43
CGIAR PUBLICATIONS	45
CGIAR CENTRES PARTICIPATING IN THE SYSTEM-WIDE GENETIC RESOURCES PROGRAMME (SGRP)	47
OTHER PUBLICATIONS	48

GENERAL PUBLICATIONS

IPGRI Annual Report

IPGRI publishes every year a report providing a detailed overview of its activities. The report also contains a 'Highlights' section in Arabic, Chinese, English, French, German and Spanish. 1997 issue available from IPGRI's Web site, at <http://www.cgiar.org/ipgri/publicat/1997ar/contents.htm>

FAO/IPGRI Plant Genetic Resources Newsletter

Quarterly. A4. Distribution limited to Institutions.

This newsletter features articles and reviews of developments in plant genetic resources, book reviews, news and notes on IPGRI activities. Articles are mainly in English with French and Spanish summaries. Articles in French and Spanish are also published. Back issues from No. 41, March 1980, are available.

Index (November 1996)

1996. 80 pages. 21x29.7 Softcover. ISSN 1020-3362

An index of articles from issues 25 to 100 of the Plant Genetic Resources Newsletter and from issues 1 to 24 of the FAO Plant Introduction Newsletter, the previous title of the publication.

IPGRI Regional Newsletters

Since 1988 the Regional Offices of IPGRI have been producing newsletters containing immediate news of collecting and genetic resources activities and developments, as well as meeting reports, personnel changes, etc. Four are produced, covering: the Americas (and Canada); Europe, the Near East and North Africa; Sub-Saharan Africa; and East Asia and the Pacific. For more information, or to be placed on the mailing list for any or all of these newsletters, contact the IPGRI Regional Offices. Latest issues available from IPGRI's Web site, at http://www.cgiar.org/ipgri/publicat/pgrn_e.htm

Forgen news

This informal publication is to provide an update on IPGRI'S research on conservation and use of forest genetic resources worldwide

COGENT Newsletter

A newsletter of the International Coconut Genetic Resources Network

Revised Priorities among Crops and Regions

1981. 18 pages. 17x24.5 Softcover *

This booklet presents the criteria used by IBPGR for selecting priorities among crops and regions and provides a detailed list of these priorities.

Plant Variety Rights and Genetic Resources

1983. 8 pages. 17x24.5 Softcover *

A statement of the policy of IBPGR on plant variety rights. It touches on the topics of their effect on the availability of genetic resources, on genetic erosion, and on genebanks and the future of variety improvement.

Conserving the Wild Relatives of Crops

Erich Hoyt

1992. 52 pages. 19x29 Softcover.

The wild relatives of crops provide an important source of germplasm for the development of highly specialized cultivars. The conservation of these wild relatives is complex and difficult. This booklet is meant to increase public awareness of the issues by providing a clear account of why conservation of crop relatives is important, how it can be effected and what actions need to be taken in the future.

Also available in French: La Conservation des Plantes Sauvages Apparentées aux Plantes Cultivées and Spanish: Conservando los Parientes Silvestres de las Plantas Cultivadas

Ecogeographical Surveying and *In Situ* Conservation of Wild Relatives

1985. 27 pages. 17x24.5 Softcover *

After looking at the principles for ecogeographic surveying and *in situ* conservation, this report puts forward a proposal for action and policy recommendations.

Diversity for development

The strategy of the International Plant Genetic Resources Institute

1993. 62 pages. 18.5x26 Softcover. ISBN 92-9043-146-6

What plant genetic resources are and the role they play in conservation and sustainable development. The evolution of IBPGR into IPGRI, a review of some past activities. What constitutes IPGRI, its mandate, mission and guiding principles. What IPGRI will do to accomplish its major goals. This is essentially the heart of the strategy, detailing IPGRI's objectives and looking at ways to meet them.

Diversity for development

The new strategy of the International Plant Genetic Resources Institute

1999. 58 pages. 21x29.8 Softcover. ISBN 92-9043-403-1

Also available from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/strategy/index.htm>

In 1993, IPGRI published its first Strategy as a new institute. The original Diversity for Development was written in the context of a world that had only come to grips with the connection between environment and development. The Strategy described IPGRI's intention to concern itself primarily with what was, at that time, seen as one of the world's highest development priorities: the conservation of plant genetic resources for food and agriculture. It was impossible to predict in 1993 just how quickly things would change in the field of plant genetic conservation. It has led countries to re-examine their capacities to use, as well as to conserve, these resources. These international, national and institutional developments led IPGRI to re-examine and revise its strategy as the Institute prepares to celebrate its 25th anniversary in 1999. The outcome is a vision of the future that places the use of genetic resources at the centre of rural development. We believe that this Strategy will not only enhance our ability to safeguard genetic diversity for future generations, but also will enable us to put that diversity to work for development today.

Diversity for development

Highlights of IPGRI's Strategy

1999. Brochure

In Defence of Diversity**Focus on Asia, The Pacific and Oceania**

1994. 13 pages. 17x24 Softcover. ISBN 92-9043-235-7

Asia, the Pacific and Oceania is a vast region with enormous variability in terms of culture, economic development and genetic resources. IPGRI's activities in this region are designed to complement and support national efforts for the conservation and use of plant genetic resources, as a means to support global progress towards sustainable development.

In Defence of Diversity

1994. 13 pages. 17x24 Softcover. ISBN 92-9043-233-0

Throughout the ages, the earth's plant genetic diversity has evolved in harmony with human culture. Humanity has applied its knowledge and skills in order to manipulate nature to meet changing needs. But population growth and environmental destruction have become at last global forces capable of affecting the fate of future generations. The time has come for humanity to moderate its demands on the planet and to conserve and use the earth's plant genetic resources in a way that alone can ensure the continuation of civilization. IPGRI is committed to meeting the challenge of genetic resources conservation and use and to working, in collaboration with its national and international partners, in defence of diversity.

Also available in Italian: In Difesa della Diversità

In Defence of Diversity**Focus on West Asia and North Africa** (Also available in Arabic)

1995. 17 pages. 17x24 Softcover. ISBN 92-9043-261-6

Justly proud of their heritage, the countries of West Asia and North Africa are ensuring that future generations - both within WANA and worldwide - will be able to benefit from the region's priceless genetic riches. With IPGRI's help, WANA will continue to support the conservation and use of its plant genetic resources as a contribution to sustainable agricultural development.

In Defence of Diversity**Focus on Europe**

1995. 20 pages. 17x24 Softcover. ISBN 92-9043-264-0

The Europe region, with its high concentration of important genetic resources, has a key role to play in the ongoing effort to maintain biodiversity and protect the plant species that may be essential to ensure the health and food security of future generations. IPGRI's activities are designed to support existing national programmes and raise international awareness of the importance of the Europe region in global efforts for sustainable development.

Local Crop Development: an annotated bibliography

W.M. van der Heide, R. Tripp (compilers) and W.S. de Boef

1996. 153 pages. 21x29.7 Softcover. ISBN 92-9043-270-5

Published in collaboration with CGN, CPRO-DLO, ODI and IPGRI

The interest in *in situ* and community conservation approaches has caused significant confusion among professional conservationists. A change in the conservation perspective has suddenly placed genebanks in a complementary role next to indigenous and local conservation efforts. Conservation is now linked to direct utilization efforts by communities in local crop development. Further confusion has arisen through the increased number of professionals involved in debates on conservation. Development elements have been integrated into the conservation paradigm. Utilization perspective and local knowledge have widened the spectrum of conservation. This range of interests and viewpoints has led to many different interpretations of what conservation and local crop development are all about. The intention of this bibliography is to bring some clarity to the literature available on the changing perspective on the conservation of biodiversity, farmer's management of genetic diversity and local crop development activities.

Five Continents

By N.I. Vavilov

1996. 198 pages. 17x24. Softcover. ISBN 92-9043-302-7

Distribution limited to institution libraries.

Finally published in English, this book contains descriptions by Academician N.I. Vavilov of the expeditions he made between 1916 and 1940 to five continents, in search of new agricultural plants and confirmation of his theories on plant genetic diversity. Vavilov is ironic, mischievous, perceptive, hilarious and above all scholarly. This book is a readable testament to his tenacity and belief in his work, in the face of the greatest adversity.

Scientists, Plants and Politics**A history of the plant genetic resources movement**

By Robin Pistorius (Vavilov-Frankel Fellow - 1993)

1997. 134 pages. 17x24 Softcover. ISBN 92-9043-308-6

The Vavilov-Frankel Fellowships programme was established by the IPGRI Board of Trustees to commemorate the unique contributions to plant science by academician Nikolai Ivanovich Vavilov and Sir Otto Frankel. This research focused on examining and recording the work of scientists in the plant genetic resources community, including those after whom the Fellowship Fund is named. This research aims to describe and analyze the historical background to today's effort to conserve and use plant genetic resources. They are a salute to the early pioneers in this field and a record of the actions and debates that have done so much to shape the way the scientific community addresses conservation today, as well as the perspectives of the many other individuals around the world who are equally concerned with the maintenance of this priceless genetic heritage.

Vavilov and his Institute**A history of the world collection of plant genetic resources in Russia**

By Igor G. Loskutov (Vavilov-Frankel Fellow - 1993)

1999. 188 pages. 17x24 Softcover. ISBN 92-9043-412-0

The Vavilov-Frankel Fellowships programme was established by the IPGRI Board of Trustees to commemorate the unique contributions to plant science by academician Nikolai Ivanovich Vavilov and Sir Otto Frankel. The research has produced two books, the present one and the one published in 1997 by Robin Pistorius: *Scientist, Plants and Politics*.

Seeds and survival: crop genetic resources in war and reconstruction in Africa

Paul Richards and Guido Ruivenkamp

1997. 61 pages. 17.5x25. Softcover. ISBN 92-9043-349-3

This book considers the impact of war, civil strife and low-intensity conflict on the management of plant genetic resources, in regions where crop plant genetic resources are still partly (or mainly) conserved *in situ* by small-scale agriculturalists. The book deals with: war, low-intensity conflict and erosion of plant genetic resources; policy and practical options to link effectively the fields of relief, rehabilitation and plant genetic resource management. This book was commissioned by the International Plant Genetic Resources Institute and the Joint Working Group on Technology and Agrarian Development,

Agricultural University, Wageningen. The text draws upon the research and personal experiences of the various authors and is intended to stimulate debate and further research on the linked issues of seed supply and genetic resources management in rural communities recovering from war, civil strife and disasters.

Women Farmers and Andean Seeds

Mario E. Tapia and Ana De la Torre

1998. 45 pages. 17x24 Softcover. ISBN 92-9043-378-7

In rural areas, the conservation and use of plant genetic resources begins with women. As smallholder farmers, women are involved in all areas of the crop cycle from seed selection to planting, harvest, storage and processing. Within the household, women are responsible for food needs and welfare, including the gathering and utilization of food, fodder, fuel, medicinal plants and fibre. In these roles, women often determine which plant resources to conserve and use, which crop varieties to grow, which food products to keep for home consumption and which to sell at the local market. As illustrated by this case study of women farmers and seed in the Andes, rural women have a special interest in the diverse and multiple uses of plants and other biological resources, given their varied and complex responsibilities in rural households. The knowledge acquired as managers of these resources for livelihood, health and food security constitutes a knowledge system that both ensures subsistence and community needs, and contributes to the conservation and use of local varieties.

Also available in Spanish, *La Mujer campesina y las semillas andinas*, from IPGRI Regional Office for the Americas.

El Rol Del Género en la Conservación, Localización y Manejo de la Diversidad Genética de Papa, Tarwi y Maíz

Lucio Iriarte, Litza Lazarte, javier y David Fernández (BIOSOMA-Cochabamba)

1999. 78 pages. 17x24 Softcover.

Available from IPGRI Regional Office for the Americas.

PUBLIC AWARENESS

The Public Awareness Office of IPGRI has a variety of material available, including leaflets, a range of posters illustrating various activities and issues, and the IPGRI Slide Pack, which is a set of 35 mm slides illustrating the work of IPGRI, its programmes and achievements. Write for further details to the Public Awareness Office, IPGRI, Rome.

Geneflow

This is a publication of IPGRI that serves to contribute to the flow of information about the importance of the Earth's plant genetic resources.

1. English version 1st issue (1989)
2. Spanish version (1990)
4. English version 3rd issue (1991)
5. English version 4th issue (1992)
6. Spanish version (1992)
7. English version 5th issue (1993)
8. French version 5th issue (1993)
9. English version 6th issue (1994)
10. Arabic version 6th issue (1994)
11. English version 7th issue (1995)
12. English version 8th issue (1996)
13. Chinese version 7th issue (1996)
14. French version 8th issue (1996)
15. English version 9th issue (1997)
16. English version 10th issue (1998) also available from IPGRI's Web site , at <http://www.cgiar.org/ipgri/pa/gene98/index.htm>
17. English version 11th issue (1999)

ISSUES IN GENETIC RESOURCES

Issues in Genetic Resources is an occasional series of papers published by IPGRI on important topics of interest to the genetic resources community.

Issues in Genetic Resources No. 1, May 1994

Material transfer agreements in genetic resources exchange - the case of the International Agricultural Research Centres

John H. Barton and Wolfgang E. Siebeck

1994. 64 pages. 21x29.8 Softcover. ISBN 92-9043-239-X

The Convention on Biological Diversity, which provides incentives for countries to exercise sovereign rights over genetic resources in their territories, has led several countries to develop policies and strategies governing the conservation and use of genetic diversity, including conditions for its release. A system is required to facilitate the unhindered movement of genetic resources and the fair and equitable sharing of benefits derived from their use. This publication, a contribution to the debate on these issues, suggests mechanisms by which these objectives might be achieved.

Issues in Genetic Resources No. 2, May 1994

A multilateral system for plant genetic resources: imperatives, achievements and challenges

David Cooper, Jan Engels and Emile Frison

1994. 44 pages. 21x29.8 Softcover. ISBN 92-9043-238-1

Better use of plant genetic resources is critical to meeting the challenges of increasing food production and of alleviating poverty. All countries depend on plant genetic resources originating beyond their borders, which means that international cooperation is essential to secure continued access to these resources. International agreements are also necessary to guarantee their conservation. Both aims can be achieved only if there is an effective mechanism for sharing benefits with the countries that maintain these resources. This paper concludes that a multilateral system, within the framework of the Convention on Biological Diversity, is required to guarantee these objectives.

Issues in Genetic Resources No. 3, October 1995

Participatory plant breeding

Jaap Hardon (rapporteur)

1995. 15 pages. 21x29.8 Softcover. ISBN 92-9043-266-7

The outcome of a workshop on participatory plant breeding sponsored by IDRC, IPGRI, FAO and CGN at Wageningen, the Netherlands on 26-29 July 1995. The objective was to develop a strategy for alternative approaches to classical centralized plant breeding.

Issues in Genetic Resources No. 4, June 1996

Access to plant genetic resources and the equitable sharing of benefits: a contribution to the debate on systems for the exchange of germplasm

1996. 86 pages. 21x29.8 Softcover. ISBN 92-9043-285-3

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/policy/muse.htm>

There is a wide spectrum of options for genetic resources exchange systems. The report considers the possible structure of a more formal approach. It presents a flexible multilateral framework - referred to as the Multilateral System for Exchange (MUSE) - that would be governed by mutually agreed rules. MUSE is not an exchange system *per se*; rather it is the framework for a system, which could accommodate the broad range of options existing between the extremes of purely bilateral arrangements and informal multilateral approaches to exchange. The policy basis for the MUSE framework would be set by general principles established in the CBD. The system would operate according to standard rules governing conditions of membership, terms of access to genetic resources, mechanisms for sharing benefits among participants, and relationships with non-members. The MUSE rules would provide formal clarification - and protection - of the rights and obligations associated with the exchange of PGR under the terms of the CBD and the revised International Undertaking. It is hoped that the IPGRI report will stimulate interest and contribute positively to the on going debate on systems for germplasm exchange.

Issues in Genetic Resources No.6, June 1997

Intellectual Property Rights and Plant Genetic Resources: Options for a *Sui Generis* System

Dan Leskien and Michael Flitner

1997. 77 pages. 21x29.8 Softcover. ISBN 92-9043-329-9

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/policy/intro.htm>

This study aims at the development and evaluation of elements for inclusion in an intellectual property rights system *sui generis* for the protection of plant varieties. Pursuant to the TRIPS Agreement, members shall provide patent protection for any inventions, whether products or processes, in all fields of technology. Members are allowed to exclude from patentability *inter alia* plants and animals other than micro-organisms. However, the TRIPS Agreement explicitly requires members to provide for the protection of plant varieties either "by patents or by an effective *sui generis* system or by any combination thereof." The report studies the legal obligations posed by the TRIPS Agreement in relation to plant genetic resources. It further analyzes the status of plant genetic resources under the existing international regulatory framework, in particular the Convention on Biological Diversity. The Study gives an overview of and discusses possible elements, for example recognition of Farmers' Rights, which, if included in a protection system for plant varieties, may contribute to reconciliation of the interests of formal breeders with the rights and interests of informal breeders. The study also examines the options for regulating the interface between a *sui generis* legislation and other intellectual property rights, such as patents. There is a broad range of possible TRIPS-compatibles *sui generis* systems. Those systems should be explored and discussed before ready-made protection system currently being used in many industrialized countries are adopted.

Issues in Genetic Resources No.7, June 1998

Recent policy trends and developments related to the conservation, use and development of genetic resources

Susan H. Bragdon and David R. Downes

1998. 42 pages. 21x29.8 Softcover. ISBN 92-9043-380-9

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/policy/ipr7.htm>

The erosion of genetic resources and hence diversity continues at an alarming pace. Simultaneously, technologies which develop and make use of these resources outpace the ability of laws and societies to understand and cope with them. Spurred by technological advances, appreciation of the monetary and non-monetary value of genetic resources has grown, leading to increasing conflict over rights and responsibilities for these resources. Developments in international and national law and policy over the past 5 years have significantly changed the policy environment relating to the management and control of genetic resources. Decision-makers trying to devise good, coherent, consistent policy on genetic resources are faced with a myriad of related, rapidly evolving issues being discussed in multiple national and intergovernmental fora. The task of discerning all the issues of relevance to the conservation and management of genetic resources and then integrating them into consistent policy is extremely complex. With continuing globalization and increased understanding of the world's interdependence on all levels, few important issues can be meaningfully addressed without undertaking the complex process of unweaving and understanding relevant issues and then integrating a policy response. Better analytical tools are needed to enable policy-makers to evaluate the trade-offs and consequences of particular decision. Analysis of recent development need in terms of their objectives, interests and relations to

one another is a necessary first step in developing better analytical tools for policy-makers. This paper analyzes developments in the past 5 years, identifying cross-cutting issues and trends that have emerged including farmers' rights and interests of indigenous and local communities, benefit-sharing, access to genetic resources, patenting and industry trends, and *sui generis* protection of plant varieties. The time is ripe for an evaluation of where we have been and where we want to go with regard to the conservation, use and development of genetic resources. The paper identifies and analyzes key decision points and critical, emerging legal and policy issues having an impact on genetic resources. It thereby provides the foundation for beginning to assess decision, where they are leading relative to policy objectives and whether or not course corrections are warranted.

Issues in Genetic Resources No.8, August 1999

**Strengthening National Programmes for Plant Genetic Resources for Food and Agriculture:
Planning and Coordination**

Charlie Spillane, Jan Engels, Hareya Fassil, Lyndsey Withers and David Cooper

1999. 51 pages. 21x29.8 Softcover. ISBN 92-9043-411-2

Efficient and well-coordinated national programmes on plant genetic resources for food and agriculture (PGRFA) can contribute greatly to national socioeconomic development. The recent broadening of interest in the management and use of plant genetic resources calls for the wider involvement of different sectors and stakeholder groups in national PGRFA programmes and planning processes. If PGRFA activities are to meet current and future national needs, they require effective coordination, both horizontally – across different sectors, ministries and stakeholder groups – and vertically – between policy, institutional and field-level activities. Such coordination can minimize duplication of effort and ensure complementarity between activities. Some countries may wish to establish broader national programmes integrating the management of other forms of genetic resources such as animal, forestry, fish and microbial genetic resources. While this paper focuses on programmes for the conservation and use of PGRFA, many of the issues and options presented are equally valid for national programmes with a broader scope.

This paper reviews national PGRFA planning processes and the purpose, functions and possible activities of a national PGRFA programme. Each country will need to define the purpose, functions and activities of its programme according to national needs and objectives. Recognizing that different programme structures may be necessary for different countries, the requirements for meeting core functions are identified, and issues and options for structural organization and planning processes are reviewed, with reference to the experiences of existing national programmes. Major stakeholder groups are identified, and the importance of involving them fully in the planning process is emphasized. The opportunities for integrating PGRFA planning with other national planning processes are highlighted. Regional options for collaborative PGRFA activities between countries are also discussed. The paper concludes by suggesting that participatory planning processes and flexible national programme structures are likely to be the most appropriate, if the continual changes taking place in the physical, biological, policy, legal, economic and social environments are to be dealt with in a manner that effectively supports national socioeconomic development.

Key Questions for Decision-Makers

Protection of Plant Varieties under WTO Agreement on Trade-Related Aspects of Intellectual Property Rights

Decision Tools – October 1999

1999. 23 pages. 17x24 Softcover. ISBN 92-9043-420-1

Today's decision-makers are faced with implementing a myriad of international legal obligations that are relevant to the conservation, use and development of plant genetic resources. These obligations arise from international legal treaties and instruments with diverse and – if not implemented rationally – potentially conflicting objectives. These include, for example, liberalizing trade, conserving wetlands, conserving biodiversity and ensuring equitable benefit-sharing derived from its sustainable use, and mitigating the effects of, and ultimately halting, climate change. IPGRI's legal and policy work aims to provide decision-makers with practical analysis and tools to guide them in formulating responsive policy and legislation that is consistent with their national objectives and the sustainable management of plant genetic resources.

This volume is part of an ongoing body of work that IPGRI hopes will assist decision-makers with the complex task of discerning the many issues of relevance to the conservation and management of plant genetic resources and devising a coherent and consistent policy and legislative response. It is our hope that decision-makers and those wishing to influence the decision-making process will find this volume to be a useful tool to help understand implementation options under Article 27.3(b) of the TRIPs Agreement and their potential implications for their country's objectives relevant to plant genetic resources.

CROP AND TREE GENETIC RESOURCES

Coffee Genetic Resources

1980. 13 pages. 21.5x27.5 Softcover * (an updated version is available as a descriptor)

This report refers principally to the species *Coffea arabica*, other species being included only where precise information was available.

Genetic Resources of Tree Species in Arid and Semi-arid Areas

F.B. Armitage, P.A. Joustra and B. Ben Salem

1980. 118 pages. 20.7x29.3 Softcover *

This is a survey for the improvement of rural living in arid and semi-arid areas of Latin America, Africa, India and southwest Asia.

Genetic Resources of Amaranths

G.J.H. Grubben and D.H. van Sloten

1981. 21x28 Softcover *

This is a global plan of action for the genetic resources of Amaranths and it has been published in collaboration with the Royal Tropical Institute (RTI) of Amsterdam.

Genetic Resources of Cocoa

1981. 25 pages. 21x27.5 Softcover *

This publication is the result of a working group held at Arlington, Virginia, USA; the working group discussed the major existing collections and focused on the collection requirements, the sites for conservation and the descriptors to be used to characterize material.

Genetic Resources of Tomatoes and Wild Relatives

J.T. Esquinas-Alcazar

1981. 65 pages. 21x29.5 Softcover *(an updated version is available as a descriptor)

Lycopersicon esculentum and its related species are extremely important vegetables. This publication contains chapters dealing with economic and nutritional importance; origin and domestication of cultivated tomatoes; wild species; distribution and important features; genetics and genetic improvement; germplasm variation and erosion; major world collections; collecting activities; conservation; evaluation and a descriptors list.

Genetic Resources of Allium Species

D. Astley, N.L. Innes and Q.P. van der Meer

1982. 38 pages. 21.5x28 Softcover *

This report includes: identification of and information on existing collections; identification of priorities for collecting to fill these gaps; the requirements for long-term conservation; suggestion for coordinated action on characterization and preliminary evaluation of germplasm; a minimal list of descriptors for collection and agromorphological data which could be used to characterize accessions and in exchange of material.

Genetic Resources of Citrus

1982. 13 pages. 21x29.5 Softcover *

This report outlines the size and scope of existing field genebank collections, breeders' collections and information concerning aspects of exchange, disease problems and documentation of citrus species.

Genetic Resources of Sugarcane

1982. 19 pages. 21x29.5 Softcover

This report was written following the meeting of an expert Working Group on Sugarcane. This report advises on action to be taken on collecting, conservation and documentation of sugarcane germplasm.

Genetic Resources of Vigna Species

1982. 18 pages. 21.5x27.6 Softcover *

In view of the great economic importance of *Vigna* species in South/Southeast Asia, Africa and East Asia, IBPGR convened an *ad hoc* working group to discuss the current genetic resources status of *Vigna* in these regions; this publication is the result of the conclusions of that working group.

Genetic Resources of Vitis Species

1983. 11 pages. 21x29.6 Softcover * (an updated version is available as a descriptor)

A survey in 1982 of all institutes in Europe holding major collections.

Genetic Resources of Capsicum

1983. 49 pages 21x29.5 Softcover *(an updated version is available as a descriptor)

This report was written after preliminary studies undertaken by CATIE and an expert consultation. This a comprehensive report on the genetic resources of *Capsicum* in which a global plan of action is set out. A full descriptor list is also included.

Genetic Resources of Cucurbitaceae

J.T. Esquinas-Alcazar and P.J. Gullick

1983. 101 pages. 21x29.5 Softcover *

This global report looks at the historical, economical, nutritional, biological and agricultural aspects of the species; its origin, evolution and distribution; genetics and genetic improvement; variability and genetic erosion; existing germplasm collections; priorities for collecting, maintenance and conservation, and evaluation and characterization. Appendices in the volume deal with key characteristics differentiating the cultivated species, the cucurbitaceae, and descriptor lists for cucurbita, *Cucumis melo* and *Cucumis sativus*.

Genetic Resources of Cassava and Wild Relatives

P.J. Gullick, C. Hershey and J.T. Esquinas-Alcazar

1983. 56 pages. 21x29.5 Softcover *

This report was written after meetings of two working groups and a consultant's report. The publication reviews major existing collections of cassava, advises on known genetic erosion, identifies collection priorities, outlines collection procedures, identifies potential depositories for international designation, advises on storage and maintenance procedures, identifies quarantine problems affecting transfer of material and provides a list of descriptors.

Genetic Resources of Soyabean

1983. 19 pages. 21x29.5 Softcover

This report was co-sponsored by the International Soybean Program (INTOSOY) at the University of Illinois, Urbana.

Genetic Resources of *Abelmoschus* (Okra)

A. Charrier

1984. 61 pages. 21x29.7 Softcover *

This is an English translation of a report originally published in French by IBPGR. It includes a bibliographical review of cultivated okra and related species, and presents an overview of taxonomy, distribution, cytogenetics, evolution of cultivated and wild forms and varietal improvement. It also presents information on collecting missions, existing collections and their evaluation, and ends with ideas to enrich and maintain collections.

Genetic Resources of *Hevea*

1984. 14 pages. 21.5x28 Softcover

This report assesses the availability for applied research of germplasm of *Hevea brasiliensis* and other *Hevea* species, considers whether material is being lost or under threat of loss in its centre of origin and diversity, and considers steps to ensure that representative samples of genetic variability are conserved for use.

Genetic Resources of Wheat: A Survey and Strategy for Collecting

C.D.G. Chapman *

1984. 39 pages. 21x29.7 Softcover

Wheat germplasm has been extensively collected over a relatively long period. This germplasm is dispersed among a number of collections, however, and the objective of this survey is to develop a coherent picture to set priorities for future work.

A World Survey of Sorghum and Millets Germplasm

E. Acheampong, N. Murthi Anishetty and J.T. Williams

1984. 45 pages. 21x29.5 Softcover *

This report surveys the existing collections of sorghum and millets in order to identify gaps and inadequacies which exist in the collections, and to provide a basis for the formulation of recommendations for further collecting.

Genetic Resources of Tropical and Sub-Tropical Fruits and Nuts (Excluding *Musa*)

1986. 160 pages. 21x29.7 Softcover *

This book reports on specific aspects relevant to the conservation of genetic resources of 31 mainly tropical and sub-tropical fruit and nut crops. Some major crops, such as banana and plantain, which have been covered in other IBPGR publications are not included.

Catalog of Minimum Descriptors of *Arachis hypogaea* L.**Germplasm Collections from South America, 1977-82**

C.E. Simpson, E.R. Howard, D.L. Higgins and G.D. Thomas

1986. 39 pages. 27.8x21.6 Softcover

Collecting these descriptors was supported in part by two grants from IBPGR and was assembled by the Texas Agricultural Experiment Station. The principal steps of the evaluation of this germplasm are to compile the passport data and to characterize the material for easily recognized traits.

A Catalogue of Chinese Crop Germplasm for Exchange

1987. 98 pages. A4 Softcover

This catalogue was compiled by the Institute of Crop Germplasm Resources of the Chinese Academy of Agricultural Sciences to facilitate international exchange of crop genetic resources. The catalogue covers 4403 varieties of rice, barley, wheat, maize, sorghum, foxtail millet, cotton, rape and vegetables.

A Catalogue of Passport and Characterization Data of Sorghum, Pearl Millet and Finger Millet Germplasm from Zimbabwe

1987. 74 pages. A4 Softcover * S. Appa Rao and J.N. Mushonga

A catalogue of passport and evaluation data of the 2086 samples of 58 species collected during a 1982 joint mission between IBPGR and ICRISAT.

Catalog of Passport Data and Minimum Descriptors of *Arachis hypogaea* L. Germplasm Collected in South America, 1977-86

C.E. Simpson, E.R. Howard, D.L. Higgins and G.D. Thomas

1992. 247 pages. 27.5x21 Softcover

Collecting of the descriptors data was a collaborative effort between IBPGR and Texas Agricultural Experiment Station. These data can be useful for peanut breeding researchers and should be beneficial in the utilization of this valuable germplasm collection.

Buckwheat Bibliography

M.D. Zhou and R.K. Arora (compilers)

1996. 162 pages. 18x26 Softcover.

Available from IPGRI Office for East Asia and IPGRI Office for South Asia

This compilation contains literature references dealing with basic research on Buckwheat, Buckwheat improvement, genetic resources and other related aspects.

PROMOTING THE CONSERVATION AND USE OF UNDERUTILIZED AND NEGLECTED CROPS

This series of monographs is the result of a joint project between the International Plant Genetic Resources Institute (IPGRI) and the Institute of Plant Genetics and Crop Plant Research (IPK). The financial support is provided by the Federal Ministry of Economic Cooperation and Development (BMZ) of Germany through the German Agency for Technical Cooperation (GTZ). These monographs intend to draw attention to a number of species which have been neglected in a varying degree by researchers and/or underutilized economically. It is hoped that the information compiled will contribute to: (1) identifying constraints in and possible solutions to the use of this crop, (2) identifying possible untapped genetic diversity for breeding and crop improvement programmes and (3) detecting existing gaps in available conservation and use approaches. This series of monographs intends to contribute to improving the potential value of these crops through increased use of the available genetic diversity.

Physic nut

Jatropha curcas L.

Joachim Heller

1996. 66 pages. 17x24 Softcover. ISBN 92-9043-278-0

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Yam bean

Pachyrhizus DC.

Marten Sorensen

1996. 140 pages. 17x24 Softcover. ISBN 92-9043-282-0

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Coriander

Coriandrum sativum L.

Axel Diederichsen

1996. 83 pages. 17x24 Softcover. ISBN 92-9043-284-5

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Hulled wheats

Proceedings of the First International Workshop on Hulled Wheats

21-22 July 1995

Castelvecchio Pascoli, Tuscany, Italy

S. Padulosi, K. Hammer and J. Heller (editors)

1996. 262 pages. 21x29 Softcover. ISBN 92-9043-288-8

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Niger

Guizotia abyssinica (L.f.) Cass.

A. Getinet and S.M. Sharma

1996. 58 pages. 17x24 Softcover. ISBN 92-9043-292-6

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Pili nut

Canarium ovatum Engl.

Roberto E. Coronel

1996. 57 pages. 17x24 Softcover. ISBN 92-9043-296-9

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Safflower

Carthamus tinctorius L.

Li Dajue and Hans-Henning Mündel

1996. 83 pages. 17x24 Softcover. ISBN 92-9043-297-7

Chayote

Sechium edule (Jacq.) Sw.

Rafael Lira Saade

1996. 58 pages. 17x24 Softcover. ISBN 92-9043-298-5

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Bambara groundnut

Vigna subterranea (L.) Verdc.

J. Heller, F. Begemann and J. Mushonga, editors

1997. 166 pages. 21x29 Softcover. ISBN 92-9043-299-3

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Breadfruit

Artocarpus altilis (Parkinson) Fosberg

Diane Ragone

1997. 77 pages. 17x24 Softcover. ISBN 92-9043-300-X

Cat's whiskers

Cleome gynandra L.

James A. Chweya and Nameus A. Mnzava

1997. 55 pages. 17x24 Softcover. ISBN 92-9043-303-5

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Tef*Eragrostis tef* (Zucc.) Trotter

Seyfu Ketema

1997. 50 pages. 17x24 Softcover. ISBN 92-9043-304-3

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>**Sago palm***Metroxylon sagu* Rottb.

Michiel Flach

1997. 76 pages. 17x24 Softcover. ISBN 92-9043-314-X

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>**Oregano**

S. Padulosi

1997. 176 pages. 21x29 Softcover. ISBN 92-9043-317-5

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>**Black nightshades***Solanum nigrum* L. and related species

Jennifer M. Edmonds and James A. Chweya

1997. 112 pages. 17x24 Softcover. ISBN 92-9043-321-3

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>**Traditional African Vegetables**

Proceedings of the IPGRI International Workshop on Genetic

Resources of Traditional Vegetables in Africa: Conservation and Use

29-31 August 1995, ICRAF-HQ, Nairobi, Kenya

L. Guarino, editor

1997. 171 pages. 21x29 Softcover. ISBN 92-9043-332-1

Carob tree*Ceratonia siliqua* L.

I. Battle and J. Tous

1997. 92 pages. 17x24 Softcover. ISBN 92-9043-328-X

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>**Grass pea***Lathyrus sativus* L.

Clayton G. Campbell

1997. 92 pages. 17x24. Softcover. ISBN 92-9043-341-8

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>**Buckwheat***Fagopyrum esculentus* Moench

Clayton G. Campbell

1997. 93 pages. 17x24 Softcover. ISBN 92-9043-345-0

Peach palm*Bactris gasipaeas* Kunth

Jorge Mora-Urpí, John C. Weber and Charles R. Clement

1997. 83 pages. 17x24 Softcover. ISBN 92-9043-347-7

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>**Andean roots and tubers: Ahipa, arracacha, maca and yacon**

M. Hermann and J. Heller, editors

1997. 256 pages. 17x24 Softcover. ISBN 92-9043-351-5

Chenopods*Chenopodium* spp.

Tej Partap, B.D. Joshi and N.W. Galwey

1998. 67 pages. 17x24 Softcover. ISBN 92-9043-369-8

Lupin*Lupinus* L.

Wallace A. Cowling, Bevan J. Buirchell and Mario E. Tapia

1998. 105 pages. 17x24 Softcover. ISBN 92-9043-372-8

Aibika/Bele*Abelmoschus manihot* (L.) Medik.

Stephen R. Proeston

1998. 97 pages. 17x24.5 Softcover. ISBN 92-9043-381-7

The biodiversity of traditional leafy vegetables

J.A. Chweya and P.B. Eyzaguirre, editors

1999. 182 pages. 17x24 Softcover. ISBN 92-9043-404-X

There is an undervalued reservoir of diversity of African Leafy Vegetables. These vegetables are extremely important for food security, nutrition and poverty alleviation throughout Africa. However, the reservoir is under threat because the vegetables are being displaced in many areas. There is a decline in the production, utilization and diversity of these vegetables. The decline will have a significant impact on the nutritional status of households and incomes of women farmers who are the primary producers, transformers and sellers of these plants. In response to this threat to Africa's crop genetic diversity and its food security, IPGRI convened several workshop where national plant genetic resources programmes could identify priority species and carry out actions to stem this threat. The results of those actions are contained in this book, which is the latest step forward in the commitment IPGRI has to the conservation and sustainable utilization of genetic resources in Africa. The book contains authored chapters by national scientists on the diversity and uses of leafy traditional vegetables in Botswana, Cameroon, Kenya, Senegal and Zimbabwe. The conclusions outline ways that the great potential of Africa's plant genetic resources that can be used to improve the welfare of African communities.

***In situ* conservation of plant genetic resources in home gardens of southern Vietnam**

A report of home gardens surveys in southern Vietnam - December 1996, May 1997

Urs Hodel and Monica Gessler

1999. 106 pages. 21x29 Softcover. ISBN 92-9043-419-8

Home gardens are widely distributed throughout the world. Home gardens refer to the traditional land-use practices around a homestead. These traditional practices create a micro-environment rich in species diversity that is maintained for multiple uses such as food, medicine, ornamentals, cultural value, fuel as well as for crafts or utensils. As a result, it has been hypothesized that home gardens maintain crop and agroforestry genetic resources which may not be found in more extensive agro-systems. This study examined fundamental questions about the role of home gardens in conservation, namely how the dynamic nature and multiple uses of home gardens affect the stability of this micro-system and its role as a viable conservation unit. The results presented here should contribute to the development of complementary *in situ* conservation strategies and methods that take account of and include micro-environments such as home gardens which are used, valued and dynamic. The results provide useful tools and directions for further research and conservation activities in national plant genetic resources programmes.

DOCUMENTATION

Documentation of Genetic Resources: A Model

S. Blixt and J.T. Williams (editors)

1982. 84 pages. 17x24.5 Softcover *

Co-published with the Nordic Gene Bank, this publication reports the proceedings of a conference that used *Pisum* as a model for the information handling relevant to genebanks.

Documentation of Genetic Resources: Information Handling System for Genebank Management

J. Konopka and J. Hanson (editors)

1985. 87 pages. 17x24.5 Softcover *

The proceedings of a workshop held at the Nordic Gene Bank in Sweden in 1985, to raise the standard of genebank management by stimulating the development and implementation of computerized data management systems to facilitate seed-handling procedures. The book contains a list of recommendations and a minimum list of management descriptors.

Documentation of Genetic Resources: Characterization of Plant Genetic Resources Using Isozyme Electrophoresis: A Guide to the Literature

M.J.A. Simpson and L.A. Withers

1986. 102 pages. 17x24.5 Softcover *

Morphological and agronomic evaluation of variability of accessions held in genebanks may be supplemented by more direct study of the genome by electrophoresis. This survey is a guide to the literature on isozyme electrophoresis in plant biology and demonstrates the potential role of techniques in plant genetic resources.

1989 World Catalog of Centrosema Germplasm

Catalogo Mundial 1989 de Germoplasma de Centrosema

R. Schultze-Kraft, R.J. Williams, L. Coradin, J.R. Lazier, A.E. Kretschmer Jr.

1989. 321 pages. 27.6x21 Softcover

Centrosema is a new world legume of high forage potential; this catalogue compiles and cross-references the accessions in the world's major collections at CIAT, ILCA, CSIRO, EMBRABA-CENARGEN and AREC Fort Pierce-University of Florida.

Elsevier's Dictionary of Plant Genetic Resources

1991. 187 pages. 17x24.1 Hardcover. ISBN 0-444-88959-0

Available at 150 Dutch guilders from Elsevier Science Publishers, Amsterdam.

Based on the 1980 IBPGR publication **A Glossary of Plant Genetic Resources Terms (English/Arabic)** by G. Ayad, this new dictionary has been revised and brought up to date with the addition of hundreds of new terms, many in the area of genetics and biotechnology.

Plant Genetic Resources Conservation and Management

Edited by R.S. Paroda and R.K. Arora

1991. 392 pages. 24x16.5 Hardcover.

Available from IPGRI Office for South Asia

This book, the first of its kind in the Indian context, will be found useful by researchers/users and curators engaged in plant genetic resources activities, by the teachers and post-graduate students in traditional and State Universities and equally so, by the policy-makers and conservationists advocating national concern on plant genetic conservation and management. It will also be of use to the PGR community within the region of South and Southeast Asia.

Guidebook for Genetic Resources Documentation

K.A. Painting, M.C. Perry, R.A. Denning and W.G. Ayad

1993. 295 pages. 21x30 Spiralbound.

A self-teaching approach to the understanding, analysis and development of genetic resources documentation. This Guidebook comes with **Genebank Management System Software User's Guide**, a tutorial and reference guide for use with the **Genebank Management System Software (GMS)**. This guidebook will assist users in making their own decision on the analysis, design, implementation and use of both manual and microcomputer-based documentation systems. **(Chinese, Spanish and French versions available)**

Genebank Standards

1994. 13 pages. 21x29.5 Softcover. ISBN 92-9043-236-5

FAO and IBPGR have been cooperating since the early 1970s to strengthen national capabilities in *ex situ* conservation of plant genetic resources. In 1991, the Commission on Plant Genetic Resources considered it "essential that appropriate standards be developed for genebanks operating within the international Network". The Commission requested the assessment and, if necessary, redefinition of genebank standards. Subsequently, an FAO/IBPGR Expert Consultation was convened in 1992 to discuss and update the Genebank Standards that IBPGR published in 1985. The Genebank Standards recommended by the Expert Consultation were then endorsed by the 5th Session of the Commission on Plant Genetic Resources to be widely utilized as the international reference in national, regional and international genebanks. The Genebank Standards are concerned solely with the storage of seed of orthodox species. **(Arabic, Chinese, French and Spanish versions available)**

Collecting Plant Genetic Diversity: Technical Guidelines

L. Guarino, V. Ramanatha Rao and R. Reid (editors)

1995. 748 pages. 17.5x25 Hardcover. ISBN 0-85198-964-0

Available at £65.00 (US\$120.00 Americas only) from CAB International, Wallingford, Oxon OX10 8DE, United Kingdom.

In recent years it has become evident that there is no single publication that provides the prospective collector of plant germplasm with generic as well as specific, and theoretical as well as practical, information. It was to fill this gap that IPGRI, together with FAO, IUCN and UNEP, cooperated to produce this book. The volume is a comprehensive reference work and is aimed at both new and experienced collectors as well as those with a general interest in plant genetics, breeding and biodiversity.

Characterization and documentation genetic resources utilizing multimedia databases

Proceeding of a Workshop

19-20 December 1996, University of Naples Federico II, Naples, Italy

L. Puzone and Th. Hazekamp, compilers

1998. 67 pages. 21x29.5 Softcover. ISBN 92-9043-388-4

CROPS

Fruits (Buah-buahan)

S. Sastrapradja, U. Sutisna, G. Panggabean, J. Palamar Moge, S. Sukardjo and A. Tri Sunarto

Translated by M.A. Rifai and I. Lubis

Edited by C.H. Lamoureux

1980. 127 pages. 16x24 Softcover *

Vegetables (Sayur-sayuran)

S. Sastrapradja, S.H.A. Lubis, E. Djajasukma, H. Soetarno and I. Lubis

Translated by N.W. Soetjipto and S.H.A. Lubis

Edited by C.H. Lamoureux and M.A. Rifai

1981. 117 pages. 16x24 Softcover *

Root and Tuber Crops

S. Sastrapradja, N. Wulijarni-Soetjipto, S. Danimihardja and R. Soejono

Translated by M. Sri Prana and S. Danimihardja

Edited by C.H. Lamoureux and M.A. Rifai

1981. 107 pages. 16x24 Softcover *

Originally published in Indonesian under the title Ubi-ubian, this guide describes 49 of the most commonly used species of this important but neglected group of economic plants. Each description gives a species name, names in the major Asian languages and English, the taxonomy of the plant, notes on its cultivation of growth and its uses. Each description is accompanied by an elegant line drawing.

Report of a Working Group on Tropical and Sub-Tropical Forages

1984. 29 pages. 21.4x28.1 Softcover

The working group focused on the current state of tropical forage genetic resources and in particular on their genetic erosion, base collection, and characterization and evaluation.

Forage and Browse Plants for Arid and Semi-Arid Africa

Co-published with the Royal Botanic Garden, Kew

1984. 293 pages. 21x29.7 Softcover

This book contains information on 100 trees and shrubs, grasses, herbaceous legumes and forbs. Species were selected because of their wide distribution and adaptability. The information is laid out in a standard format by categories, treating each species separately; some have accompanying maps and illustrations. The information is mainly derived from a database accumulated by the staff of the Survey of Economic Plant for Arid and Semiarid Tropics, at the Royal Botanic Garden, Kew. The publication includes a list of references, a glossary and an index.

Report of a Working Group on Forages for Mediterranean and Adjacent Arid/Semi-Arid Areas

1985. 29 pages. 21.4x28.1 Softcover

This working group was convened in Cyprus as part of a forage plan of action which was approved by IBPGR in February 1983.

Manual on Standardized Research Techniques in Coconut Breeding

G.A. Santos, P.A. Batugal, A. Othman, L. Baudouin and J.P. Labouisee (Editors).

1996. 46 pages. 21x29 Softcover.

Available from IPGRI Regional Office for Asia, the Pacific and Oceania

In collaboration with the International Coconut Genetic Resources Network (COGENT), this manual will enable coconut breeders and germplasm researchers worldwide to use standardized techniques as guidelines in breeding and germplasm conservation. It is hoped that this manual will help coconut researchers to obtain better and comparable results to accelerate the development of improved varieties for millions of coconut farmers.

GENETIC DIVERSITY

Systematic and Ecogeographic Studies on Crop Genepools 1.

Mangifera L.

S.K. Mukherjee

1985. 86 pages. A4 Softcover *

This is the first of a series which summarizes studies of the geographical distribution of species, in this case those related to the cultivated mango with the purpose of devising a plan of action for collection and conservation (*in situ* and *ex situ*).

Systematic and Ecogeographic Studies on Crop Genepools 2.

El Teocintle en Mexico

1987. 50 pages. A4 Softcover (in Spanish) *

During a collecting mission in 1986, 103 accessions were taken from the principal areas of distribution of teocintle. This is a record of the trip and the material collected and an analysis of the data.

Systematic and Ecogeographic Studies on Crop Genepools 3.

Races and Populations of Maize in Yugoslavia

I. Geric, M. Zlokolica and C. Geric. In collaboration with C.W. Stuber

1989. 108 pages. 17x24.5 Softcover. ISBN 92-9043-185-7

This is the most extensive and the most complete study of genetic characteristics of populations in the Yugoslav corn collection conducted so far, using isozymes as gene markers.

Systematic and Ecogeographic Studies on Crop Genepools 4.

Herbarium Survey of African *Corchorus* L. Species

Jennifer M. Edmonds

1990. 284 pages. 17x24.5 Softcover. ISBN 92-9043-191-1

A general survey of *Corchorus* L. species was commissioned by the International Jute Organization (IJO) to provide the necessary background data on which future germplasm-collecting expeditions could be based. The survey was required to identify those wild species of potential use in the future genetic improvement of jute, in addition to identifying the countries and locations where collecting expeditions would be most profitable.

Systematic and Ecogeographic Studies on Crop Genepools 5.

Wild *Phaseolus* Ecogeography in the Sierra Madre Occidental, Mexico.

Aerogeographic Techniques for Targeting and Conserving Species Diversity

Gary Paul Nabhan

1990. 35 pages. 17x24 Softcover. ISBN 92-9043-198-9

The purpose of this report is to demonstrate more effective strategies for locating and conserving a greater diversity of wild genetic resources related to a given domesticated crop.

Systematic and Ecogeographic Studies on Crop Genepools 6.

The Distribution of *Hibiscus* L. Section *Furcaria* in Tropical East Africa

Jennifer M. Edmonds

1991. 64 pages. 17x24 Softcover. ISBN 92-9043-206-3 *

This survey is to provide the necessary background data on which germplasm-collecting expeditions could be based, by identifying those species of potential use in the future genetic improvement of kenaf and rosella and by identifying those countries and locations where collecting expeditions would be most profitable.

Systematic and Ecogeographic Studies on Crop Genepools 7.

An Ecogeographical Study of the Genus *Hordeum*

2nd edition

R. von Bothmer, N. Jacobsen, C. Baden, R.B. Jorgensen and I. Linde-Laursen

1995. 129 pages. 17x24 Softcover. ISBN 92-9043-229-2

Hordeum L. belongs to the tribe Triticeae of the family Poaceae (Gramineae). It has generally been considered a well-defined, easily recognized and monophyletic plant group; this report comprises the study of its 32 different species.

Genetic Diversity, and Crop Strategies for Roots and Tubers

ATSAF/IBPGR Workshop on Conservation of Plant Genetic Resources. Bonn, Germany, 6-9 May 1990

Edited by Barbara Becker

1991. 102 pages. 17x24 Softcover *

Core Collections of Plant Genetic Resources

T. Hodgkin, A.H.D. Brown, Th.J.L. van Hintum and E.A.V. Morales (editors)

1995. 269 pages. 17.5x25 Hardcover. ISBN 471-95545-0

Available from John Wiley & Sons, Baffins Lane, Chichester, West Sussex PO 19 1UD, United Kingdom

The core collection concept has aroused considerable worldwide interest and debate within the plant genetic resources community. It has been welcomed as a way of making an existing collection more accessible through designating a small group of accessions that would be the focus of evaluation and use and would provide an entry point to the larger collection which it aims to represent. However, concerns remain that the available knowledge of genetic diversity is still not sufficient, in any crop, to enable a meaningful core to be selected and that many of the useful character occur at such a low frequency that they would almost always be omitted from a small core collection, no matter how it was selected. This publications describes the current state of the art with respect to: methods of data analysis for developing core collections, use of different kinds of data in developing core collections, managing and testing core collections and using core collections.

Systematic and Ecogeographic Studies on Crop Genepools 8.

An Ecogeographical Study of *Vicia* subgenus *Vicia*

Nigel Maxted

1995. 184 pages. 17x24 Softcover. ISBN 92-9043-240-3

An ecogeographic study of *Vicia* subgenus *Vicia* is presented. This group contains the cultivated vetches and their wild relatives. The subgenus contains 9 sections, 9 series, 38 species and 36 subspecific taxa. Ecogeographic data were recorded for each taxon throughout the geographical range of the subgenus. Future collection and conservation priorities are discussed and specific targets for *ex situ* and *in situ* are identified.

Systematic and Ecogeographic Studies on Crop Genepools 9.

Estudios Taxonomicos y Ecogeograficos de las Cucurbitaceae Latinoamericanas de Importancia Economica

Rafael Lira Saade

1996. 281 pages. 17x24 Softcover. ISBN 92-9043-263-2 (in Spanish)

Published in collaboration with Instituto de Biologia, UNAM, Mexico

As a preamble for future conservation actions for the cucurbitaceae in Latin America, IPGRI commissioned a taxonomic and ecogeographic study of the different genepools of cucurbits, squashes, gourds, chayotes and achokchas, involving the revision of 2300 herbarium specimens, the collation of 3400 bibliographic references, and field work in Mexico, Guatemala and Costa Rica.

Participatory Plant Breeding

Proceedings of a workshop on participatory plant breeding

26-29 July 1995 - Wageningen, The Netherlands

P. Eyzaguirre and M. Iwanaga (editors)

1996. 164 Pages. 21x29.5 Softcover. ISBN 92-9043-269-1

The papers in this volume were originally presented at a workshop on participatory plant breeding which was held in Wageningen, The Netherlands, on 26-29 July 1995. The workshop was convened to crystallize a novel approach that plant breeders, genetic resource conservationists and social scientists were demonstrating with increasing success. That approach is to place knowledge about genetic resources, as well as enhanced germplasm, directly at the disposal of farmers for them to use and develop according to their own needs and practices. Experiences indicated that in using this approach, biological and social scientists were learning a great deal about the useful diversity in target crops and farming system. Farmers were also benefiting from access to greater diversity and from the partnerships they were forming with plant breeders.

Molecular genetic techniques for plant genetic resources

Report of an IPGRI Workshop

9-11 October 1995, Rome, Italy

W.G. Ayad, T. Hodgkin, A. Jaradat and V.R. Rao (editors)

1997. 137 pages. 21x29.5 Softcover. ISBN 92-9043-315-9

The last few years have seen a dramatic increase in the application of molecular genetic methods to problems relevant to the conservation and use of plant genetic resources. A variety of different methods for detecting and analyzing variation at the molecular level are now available and offer to those involved in plant genetic resources management ways of improving the effectiveness of their work. At the same time, it has become clear that there are a number of unresolved questions concerning the appropriate use of the various techniques available. These include methodological questions, problems of data analysis and management, the need to use methods capable of dealing with large numbers of accessions, and resource limitations, especially in developing countries. IPGRI recognizes the considerable potential of molecular methods for improving the conservation and use of plant genetic resources and is currently concerned with strengthening work in this area. The potential benefits of using molecular techniques are clear and individual genetic resources conservation projects are likely to make increasing use of different methodologies now available. However, there remain a number of difficulties in the effective application of the different techniques and a number of questions concerning their effective use. In particular, there are difficulties in using appropriate technologies in resource-limiting situations. This is the reason IPGRI decided to host the International workshop of experts working in different relevant areas of molecular genetics to discuss and identify the key issues.

Strengthening the scientific basis of *in situ* conservation of agricultural biodiversity on-farm. Options for data collecting and analysis.

Proceedings of a workshop to develop tools and procedures for *in situ* conservation on-farm

25-29 August 1997, Rome, Italy

Devra I. Jarvis and Toby Hodgkin (editors)

1998. 104 pages. 21x29.5 Softcover. ISBN 92-9043-370-1

In August, 1997, IPGRI, organized a workshop on how to develop tools and procedures of data collections and analyses for its ongoing global *in situ* conservation programme in the nine partner countries. In the workshop scientists, project leaders and researchers of various disciplines from the nine partner countries, FAO, Universities, NGOs, and donor organizations got together and exchanged their experiences of field data collections and analyses for the sustainable utilization and conservation of PGR on-farm. This proceedings is the outcome of the workshop intended to help partners collect and analyze socioeconomic, cultural, environmental, genetic and biological data for *in situ* conservation and to add value to traditional varieties. Another objective was to forge mutual partnership between scientists and farmers through participatory plant breeding (PPB).

Core collections for today and tomorrow

R.C. Johnson and T. Hodgkin (editors)

1999. 81 pages. 21x29.5 Softcover. ISBN 92-9043-424-4

Core collections offer a tool to improve access and management of germplasm collections, and therefore are of great interest to those who use and manage plant genetic resources. Over the past few years, experience with core collection has increased as cores for many crops have been developed. The purpose of this publication is to review the current status of core collections and present examples of core development and utilization. The authors were chosen to report on a wide range of views and experiences with core collections, but the examples were not chosen based on designation by crop. We find few cores have actually been developed for the major seed crops. Ironically, the use of core collections to improve access to large, unwieldy collections, originally envisioned by Sir Otto Frankel, has not yet come to fruition. Certainly the complexity and volume of data needed to develop a core collection for large collections can be daunting, but possible approaches and opportunity are described.

CONSERVATION AND *IN VITRO* PRESERVATION

Tissue Culture Storage for Genetic Conservation

L.A. Withers

1980. 91 pages. 21x27.8 Softcover *

In this report the author attempts to give the broadest possible examination of the present level of expertise in the use of tissue culture methods for genetics conservation.

Crop Genetic Resources - the Conservation of Difficult Material

Proceedings of an International Workshop held at the University of Reading, UK. 8-11 September 1980

L.A. Withers and J.T. Williams (editors)

1981. 134 pages. B5 Softcover ISBN 92-9046-068-9 *

This workshop provided an opportunity to assess the progress of the application of *in vitro* culture techniques to the genetic conservation of recalcitrant seed producing species and clonally propagated species.

The Design of Seed Storage Facilities for Genetic Conservation

(Handbooks for Genebanks No. 1)

A.S. Cromarty, R.H. Ellis and E.H. Roberts

1982 (revised 1990). 100 pages. 21x29.7. Softcover. Also in Chinese

This is an in-depth report of the factors to be taken into consideration when designing seed storage facilities for genetic conservation.

Use of Deep-freeze Chests for Medium- and Long-term Storage of Small Seed Collections

R.H. Ellis and E.H. Roberts

1982. 9 pages. 17x24.5 Softcover *

This small report gives recommendations and specifications for the use of deep-freeze chests in small collections.

IBPGR Advisory Committee on Seed Storage: Report of the First Meeting

1982. 13 pages. 21.7x27.5 Softcover *

IBPGR Advisory Committee on *In Vitro* Storage: Report of the First Meeting

1983. 11 pages. 21.5x27.5 Softcover

This document comments on major scientific considerations indicating the need for and affecting the planning of *in vitro* conservation programmes, existing practical constraints, *in vitro* genebanks and crops requiring priority action for *in vitro* work. Needs for research, information and training in the subject area are also considered in this report.

The Potential for Using *In Vitro* Techniques for Germplasm Collection

1984. 8 pages. 21x29.7. Softcover. ISBN 92-9043-115-6

This book is the outcome of a meeting of a subcommittee of IBPGR's Advisory Committee on *In Vitro* Conservation. It considers novel collecting techniques for vegetatively propagated species and material, such as coconut, which present practical problems.

Institutes Conserving Crop Germplasm: The IBPGR Global Network of Genebanks

J. Hanson, J.T. Williams and R. Freund

1984. 25 pages. 21x29.7 Softcover.

Genetic Variability in Tissue Culture: Impact on Germplasm Conservation and Utilization

W.R. Scowcroft

1984. 41 pages. 21x29.7 Softcover *

This technical report looks at *in vitro* culture techniques, *in vitro* germplasm storage, variability from *in vitro* culture, factors influencing somaclonal variation, origin of tissue culture instability and somaclonal variation and the impact of culture instability and somaclonal variation.

IBPGR Advisory Committee on Seed Storage: Report of the Second Meeting

1984. 27 pages. 21x29.7 Softcover *

IBPGR Advisory Committee on seed Storage: Report of the Third Meeting

1985. 22 pages. 21x29.7 Softcover

This meeting of the advisory Committee on Seed Storage was held at the University of Reading in April 1984; the Committee had been convened to establish standards which would be appropriate for genebanks operating within the international network.

Handbook of Seed Technology for Genebanks Vol I: Principles and Methodology

(Handbooks for Genebanks No. 2)

R.H. Ellis, T.D. Hong and E.H. Roberts

1985 (reprinted 1989). 210 pages. 21x29 Softcover. ISBN 92-9043-118-0*

This first volume of seed technology for genebanks deals with many of the principles of seed testing which need to be understood when monitoring the viability of seed accessions maintained in genebanks. It is the second in a general series of genebank handbooks.

Handbook of Seed Technology for Genebanks Vol II: Compendium of Specific Germination Information and Test Recommendations

(Handbooks for Genebanks No. 3)

R.H. Ellis, T.D. Hong and E.H. Roberts

1985 (reprinted 1989). 456 pages. 21x29 Softcover. ISBN 92-9043-119-9*

This second volume on seed technology for genebanks provides general approaches, detailed information, guidance and, when available, prescriptions for removing dormancy and germinating the seeds. It is the third in a general series of genebank handbooks.

Procedures for Handling Seeds in Genebanks

(Practical Manuals for Genebanks No. 1)

J. Hanson

1985 (reprinted 1988). 115 pages. 21x29.7. *

This manual is the first in a series of practical guides to suitable methods for processing and storing seeds in genebanks. It is aimed specifically at informing genebank personnel, especially those technicians and staff involved in day-to-day seed handling.

Méthodes de Gestion des Graines dans les Banques de Gènes

(Manuel Pour les Banques de Genes No. 1)

1995. 115 pages. 21x29.7 Softcover. ISBN 92-9043-258-6

Published in collaboration with Technical Centre for Agricultural and Rural Co-operation (CTA). This the French version of Procedures for Handling Seeds in Genebanks.

IBPGR Advisory Committee on *In Vitro* Storage: Report of the Second Meeting

1985. 15 pages. 21.5x27.5 Softcover

This document comments on genetic variability in tissue culture, isozyme analysis in germplasm analysis, *in vitro* research on temperate fruits, pollen storage, complementary storage methods and *in vitro* base collections.

Long-term Seed Storage of Major Temperate Fruits

1985. 38 pages. 21x29.7 Softcover *

This report discusses seed storage and germination of *Prunus*, Apple, Pear and *Vitis*.

Cost-effective Long-term Seed Storage

1985. 38 pages. 21x29.7 Softcover *

This is a report of a meeting of a subcommittee of the IBPGR Advisory Committee on Seed Storage. Particular emphasis is given to alternatives to conventional long-term seed stores operating at IBPGR preferred conditions.

The Potential Use of *In Vitro* Storage for Temperate Fruit Germplasm: A Status Report

C. Stushnoff and C. Fear

1985. 21 pages 21x29.7 Softcover *

This report discusses conservation of temperate fruit germplasm *in vitro*, using either minimum growth methods for short- to medium-term storage or cryopreservation for long-term storage.

The Design, Planning and Operation of *In Vitro* Genebanks

1986. 17 pages. 21.5x27.5 Softcover *

This is a report of a meeting of a subcommittee of the IBPGR Advisory Committee on *In Vitro* Storage. It draws attention to the scale, in terms of labour requirements and other resources, of establishing an *in vitro* active genebank.

IBPGR Advisory Committee on *In Vitro* Storage: Report of the Third Meeting

1986. 33 pages. 21x29.7 Softcover

After reviewing past and documentation research since 1985, this report looks at *in vitro* genebanks in terms of models and documentation system and areas for further development and application. These include cell culture techniques, tropical and arid zone forages, citrus relatives, allium, banana, temperate fruits, cryopreservation and stability. Two appendixes detail IBPGR's *in vitro* conservation databases and *in vitro* propagation and genetics conservation of banana and plantains.

Collection, Characterization and Utilization of Genetic Resources of Temperate Forage Grass and Clover

IBPGR Training Courses: Lecture Series. 1

B.F. Tyler (editor)

1987. 69 pages. B5 Softcover

Forage breeding relies heavily on the natural variation present in wild ecotypes for basic breeding material. This publication contains the lectures given at a short course on the characterization and utilization of a single crop within a plant breeding environment, which also aimed at providing information on the various techniques used to incorporate wild germplasm into cultivated background.

Meristem-tip Culture and Virus Indexing of Sweet Potatoes

Practical Manuals for Handling Crop Germplasm *In Vitro*. 1

S.L. Love, B.B. Rhodes and J.W. Moyer

1987. 46 pages. B5 Softcover *

This book collects the available technical data on *in vitro* methodology appropriate to sweet potato and looks at the problem of obtaining virus-free germplasm for distribution and conservation.

Recalcitrant Seed: A Status Report

H.F. Chin

Including a

Bibliography 1979-87

H.W. Pritchard

1988. 28 pages. B5 Softcover ISBN 92-9043-128-8

This report describes recent developments in work of recalcitrant seeds and makes research proposals for the future. The bibliography contains almost 100 recent references on the subject as a way of bringing up to date a literature review that IBPGR commissioned in 1979.

Scientific Management of Germplasm: Characterization, Evaluation and Enhancement

IBPGR Training Courses: Lecture Series. 2

H.T. Stalker and C. Chapman (eds)

1989. 194 pages. B5 Softcover ISBN 92-9043-141-5 *

Published in cooperation with the Department of Crop Science, North Carolina State University. The purpose of the course was to fill a void in the scientific management of germplasm and germplasm systems. The lectures and field trips were oriented towards evaluating and utilizing germplasm already in collections.

Also available in Chinese

1992. 160 pages. 18.4x26 Softcover ISBN 7-80026-495-5/S 355

Shoot-tip Culture for the Propagation, Conservation and Exchange of Musa GermplasmPractical Manuals for Handling Crop Germplasm *In Vitro* 2

D.R. Vuylsteke

1989. 56 pages. B5 Softcover ISBN 92-9043-140-7

This publication reviews in detail the history of shoot-tip culture of *Musa*, *in vitro* propagation procedures, *in vitro* conservation, germplasm exchange using *in vitro* cultures and potential problems.

Regeneration and Multiplication of Germplasm Resources in Seed Genebanks: The Scientific Background

E.L. Breese

1989. 69 pages. B5 Softcover ISBN 92-9043-186-5

The regeneration of germplasm resources is an integral part of the conservation programme. This study is directed towards the strategy and tactics of seed regeneration and multiplication by sexual reproduction in relation to problems of maintaining the genetic constitution of the original sampled population.

Soybean Genetic Resources: Diversity, Conservation, Evaluation and Utilization

1990. 159 pages. 18.4x26 Softcover (Chinese)

Zhou Ming-De (editor)

Available from IPGRI Office for East Asia

Free Radical Damage in Stored Plant Germplasm

Erica E. Benson

1990. 128 pages. B5 Softcover ISBN 92-9043-196-2

IBPGR commissioned this report to examine the implications of free radical activity for the safe conservation of plant genetic resources. This report evaluates the role of free radical damage in plant germplasm stored either as a seed or as *in vitro* (tissue culture) systems under cryopreservation in liquid nitrogen.

Establishment and operation of a pilot *in vitro* active genebankReport of a CIAT-IBPGR Collaborative Project using cassava (*Manihot esculenta* Crantz) as a model.

1995. 59 pages. 21x29.7 Softcover ISBN 92-9043-246-2

The need to explore various practical and biological aspects of managing an *in vitro* genebank was identified by the IBPGR Advisory Committee on *In vitro* Storage. *In vitro* techniques were recognized to hold great promise for the genetic conservation of problem crops that could not be stored as seed. This report will provide unique insights into the complexities of managing an *in vitro* genebank for cassava and will, undoubtedly, provide an extremely useful baseline to capitalize upon that experience in the management of collections of other crops.

***In situ* conservation and sustainable use of plant genetic resources for food and agriculture in developing countries**

Report of a DSE/ATSAP/IPGRI workshop

2-4 May 1995, Bonn-Röttgen, Germany

J.M.M. Engels (editor)

1996. 116 pages. 21x29.7 Softcover ISBN 92-9043-267-5

This publication reports the workshop on *in situ* conservation and sustainable use of plant genetic resources for food and agriculture. The workshop was the continuation of an initiative which began in May 1990 when the Council for Tropical and Sub-Tropical Agricultural Research (ATSAP) and the International Board for Plant Genetic Resources (IBPGR), now International Plant Genetic Resources Institute (IPGRI), organized the first workshop in which German and IBPGR scientists met to "strengthen the relationship between IBPGR and German scientists by establishing research contacts and collaboration". This workshop resulted in a number of complementary funded projects including Refinement of Cryopreservation Techniques for Potato, Effective Pollination Control Methods in the Regeneration of Germplasm, and Spatial and Temporal Distribution of Genetic Diversity in Wild Forage Species under Stress Conditions. The convention on Biological Diversity emphasizes the importance of *in situ* conservation of plant genetic resources referring to the evolutionary process which sustains and develops genetic resources. Explicitly included is the *in situ* conservation of cultivated species in agricultural areas where farming systems and landraces were developed. The objective of the workshop was to contribute to conservation and sustainable use of plant genetic resources for food and agriculture, including forestry, through: increased understanding of *in situ* (including on-farm) conservation, integration of conservation strategies (*in situ* and *ex situ*), increased cooperation between IPGRI and parties in Germany and initiation of joint (IPGRI/German) Projects.

Seed Storage Behaviour: a Compendium

(Handbooks for Genebanks No. 4)

T.D. Hong, S. Linington and R.H. Ellis

1996. 656 pages. 31x28 Binder. ISBN 92-9043-280-2

Also available from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

This handbook provides an introduction to seed storage physiology for those responsible for plant genetic conservation and a selective summary of the literature on seed survival in storage, and thus on seed storage behaviour, for over 7,000 species from 251 families. The Compendium is intended to be used along with the Protocol (see IPGRI technical Bulletin No.1 - A protocol to determine seed storage behaviour).

Status report on the development and application of *in vitro* techniques for the conservation and use of plant genetic resources

Sarah E. Ashmore

1997. 67 pages. 21x29 Softcover, ISBN 92-9043-339-6

This status report describes the existing techniques for *in vitro* conservation of plant cells, tissues and organs, their current state of the art, present application and existing problems, identifies priority areas for collaborative research, technology development and transfer and proposes a plan of action to address the priority issues identified.

Intermediate/Recalcitrant Tropical Forest Tree Seeds

Proceedings of a workshop on improved methods for handling and storage of intermediate/recalcitrant tropical forest tree seeds

8-10 June 1995, Humlebaek, Denmark

A.S. Ouédraogo, K. Poulsen and F. Stubsgaard (editors)

1996. 169 pages. 21x29 Softcover, ISBN 92-9043-268-3

The workshop was organized jointly with DANIDA Forest Seeds Centre, Humlebaek, Denmark. The workshop was held in recognition of the problems of handling and especially storing the seeds of many tropical tree species. The lack of cost-effective handling methods limits the planting and use of these important tree species, which in turn impacts negatively on environment and genetic resources conservation efforts. Tropical tree seeds are frequently recalcitrant or intermediate in their storage behaviour, meaning that they cannot be stored in conventional ways. These concepts are, however not well-defined, and new storage behaviours are continually being discovered. The purpose of the workshop was to gather individuals who are active in tree seed storage research, in order to: understand the present state of knowledge and formulate recommendations for future research; examine the pros and cons of

alternative species for use as models in research; explore possibilities for collaboration, and bring researchers from developing and developed countries together. It is hoped that future comprehensive research efforts in this strategic field will be undertaken, based on the conclusions and recommendation of the workshop as contained in these proceedings.

Regeneration of accession in seed collections: a decision guide

(Handbooks for Genebanks No. 5)

N.R. Sackville Hamilton and K.H.. Chorlton

1997. 75 pages. 21x29 Softcover. ISBN 92-9043-319-1

This decision guide is intended to facilitate the development of optimum procedures for regeneration of seed germplasm. It deals with the timely identification of accessions with inadequate quality or quantity of seed. It also considers the regeneration of those accessions to produce new seed of maximum quality and optimum quantity, with minimum loss of genetic integrity and as cost-effectively as possible. The guide discusses establishment of achievable targets for quality and quantity of seed produced, the maintenance of genetic integrity and minimizing the cost of regeneration. Calculations are based on the requirements of different units of usage - the distribution unit, test unit and base unit - together with a safety factor allowing for losses and a factor allowing for uncertainty of usage. A single case study is presented by way of illustration, and discusses the consequences of the various causes of loss of genetic integrity, by drift, selection and contamination.. The guide aims to provide general considerations on how to improve the effectiveness of germplasm regeneration programmes. The guide includes a poster-size chart outlining the contents of the decision guide in schematic form.

Seed Science Research Series

Volume 8 1-74, September 1998, Supplement No.1

Ultra-Dry Seed Storage

CABI/IPGRI Joint Publication

M. Black, C. Walters and M.A. Cohn (editors)

1998. 73 pages. 20x26.5 Softcover. ISSN 0960-2585

Regeneration of Seed Crops and Their Wild Relatives

Proceedings of a Consultation Meeting

4-7 December 1995

ICRISAT, Hyderabad, India

J.M.M. Engels and R. Ramanatha Rao (editors)

1998. 167 pages. 21x29 Softcover. ISBN 92-9043-389-2

The *ex situ* conservation of plant genetic resources is of vital importance to contribute to long-term global food security. *Ex situ* conservation consists of a series of routine operations and activities, of which many are interlinked, and all of which need proper management. Regeneration of stored germplasm seed samples is one of the key activities as it has a direct bearing on the quality of the material conserved, it requires specific knowledge and expertise and it is usually labour intensive. An average of 50 percent of current national collections are in need of regeneration and urgent action is needed to avoid much of the stored genetic diversity being lost for ever. The deliberations of this meeting resulted in a much better understanding of the complexity of the regeneration process, and generated suggestions and ideas on how to make the process more efficient and cost-effective.

Management of Field and *in vitro* germplasm collections

Proceedings of a Consultation Meeting

15-20 January 1996

CIAT, Cali, Colombia

Florent Engelmann, editor

1999. 164 pages. 21x29 Softcover. ISBN 92-9043-432-5

The meeting examined the role of field and *in vitro* germplasm collections in strategies to conserve and use clonally propagated crops, problems and constraints in their management, and the complementarity of field and *in vitro* germplasm collections. The meeting produced a list of key issues to address in the establishment, maintenance and use of field and *in vitro* germplasm collections, and in the integration of the two conservation methods in a complementary manner. The meeting also recommended to develop general guidelines for the management of field and *in vitro* germplasm collections, which should identify key issues and provide genebank curators with decision criteria and options in establishing, maintaining and using field and *in vitro* germplasm collections. These guidelines are currently being finalized and will be published in the near future.

Cryopreservation of tropical plant germplasm

Current research progress and application

Florent Engelmann and Hiroko Takagi, editors

2000. 496 pages. 17x24 softcover. ISBN 92-9043-428-7

This publication includes the papers presented during an international workshop held in Tsukuba, Japan in October, 1998 which was jointly organized by JIRCAS and IPGRI. This meeting aimed at assessing the state of the science, exploring cryopreservation applications, examining outstanding problems and identifying priority areas for collaborative research, technology development, transfer and application. The resulting volume is a synthesis of new and original information in the area of cryopreservation of tropical plant germplasm.

TECHNICAL BULLETINS

IPGRI Technical Bulletin are published by the International Plant Genetic Resources Institute with the intention of putting forward definitive recommendations for techniques in genetic resources. They are especially aimed at National Programme and genebank personnel. The series as a whole is targeted at scientists and technicians managing genetic resources collections. Each title will aim to provide guidance on choices while implementing conservation techniques and procedures and in the experimentation required to adapt these to local operating conditions and target species. Techniques are discussed and, where relevant, options presented and suggestions made for experiment. The Technical bulletins are authored by scientists working in the genetic resources area and IPGRI would appreciate receiving suggestions of topics for future volumes. In addition, IPGRI would encourage, and is prepared to support, the exchange of research findings obtained at the various genebanks and laboratories.

A protocol to determine seed storage behaviour

(IPGRI Technical Bulletin No.1)

T.D. Hong and R.H. Ellis

1996. 64 pages. 17x25 Softcover. ISBN 92-9043-279-9

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/publicat/techbull/index1.htm>

This publication provides an approach by which conservationists can determine whether or not long-term seed storage is feasible for a particular species, i.e. whether or not that species shows orthodox seed storage behaviour. It provides advice on the implementation of the protocol, examples of ways in which the results from seed storage studies could be misinterpreted due to confounding factors, as well as several alternative approaches for estimating seed storage behaviour prior to carrying out actual investigations with the seeds. In particular, the latter section introduces the concept of a multicriteria approach for estimating seed storage behaviour. It is intended to be used along with the Compendium (see IPGRI Handbooks for Genebanks No.4 - Seed Storage behaviour: a Compendium); these two publications are essentially complementary. The overall aim of the protocol is to guide and encourage further work in this area of seed physiology (particularly for species on which relatively less work has been done to date) with the objective to expanding on/updating the type of species-specific data compiled in the compendium.

Molecular tools in plant genetic resources conservation: a guide to the technologies

(IPGRI Technical Bulletin No.2)

A.Karp, S.Kresovich, K.V. Bhat, W.G. Ayad and T. Hodgkin

1997. 47 pages. 17x25 Softcover 92-9043-323-X

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/publicat/techbull/index2.htm>

In October 1995, IPGRI organized a small workshop on the use of molecular techniques in the conservation of plant genetic resources. One area of discussion was the considerable range of different molecular techniques available and the ways in which they could best be used. Deciding on which technique would be most appropriate for particular investigations is not always straightforward and depends on a range of different factors including the nature of the problem, the biology of the species and the resources available. A number of the experts who participated in the meeting collaborated with IPGRI staff to prepare this publication, which attempts to provide a brief overview of currently available techniques and to outline some of their strengths and limitations. It also provides a framework to assist users in identifying what technique(s) might be most appropriate for their own needs. It is not intended as a laboratory manual of the techniques or as a substitute for the many excellent discussions of the strengths and weaknesses of individual methods that can be found in the literature. Rather, it is a broad survey of the main features of the different techniques and of the factors that conservation workers should bear in mind when initiating a molecular genetic based investigation.

GERMPLASM HEALTH

FAO/IPGGR Technical Guidelines for the Safe Movement of Germplasm

In a joint collaboration, FAO and IPGRI are publishing booklets specifying guidelines for the safe international movement of species.

Allium spp.

M. Diekmann (editor)

1997. 60 pages. 17x20.8 ISBN 92-9043-346-9

Cassava

E.A. Frison and E. Feliu (editors)

1991. 48 pages. 17x20.8 ISBN 92-9043-152-0

Citrus

E.A. Frison and M.M. Taher (editors)

1991. 52 pages. 17x20.8 ISBN 92-9043-151-2

Cocoa

E.A. Frison and E. Feliu (editors)

1989. 20 pages. 17x20.8 ISBN 92-9043-142-3

Coconut

E.A. Frison, C.A.J. Putter and M. Diekmann (editors)

Published with the support of Overseas Development Administration (ODA), UK

1993. 48 pages 17x20.8 ISBN 92-9043-156-3

Edible Aroids

F.W. Zettler, G.V.H. Jackson and E.A. Frison (editors)

1989. 24 pages. 17x20.8 ISBN 92-9043-147-4

Eucalyptus spp.

W.M. Ciesla, M. Diekmann and C.A.J. Putter (editors)

1996. 66 pages. 17x20.8 ISBN 92-9043-161-X

Grapevine

E.A. Frison and R. Ikin (editors)

1991. 54 pages. 17x20.8 ISBN 92-9043-153-9

Legumes

E.A. Frison, L. Bos, R.I. Hamilton, S.B. Mathur and J.D. Taylor (editors)

1990. 88 pages. 17x20.8 ISBN 92-9043-150-2

Musa ssp. (2nd edition)

M. Diekmann and C.A.J. Putter (editors)

1996. 28 pages. 17x20.8 ISBN 92-9043-159-8

Potato

Colin J. Jeffries

Published in collaboration with the Scottish Agricultural Science Agency (SASA)

1998. 177 pages. 17x20.8 ISBN 92-9043-390-6

Small Fruit

M. Diekmann, E.A. Frison, T. Putter (editors)

Published in collaboration with the Small Fruit Virus Working Group of the International Society for Horticultural Sciences

1994. 128 pages. 17x20.8 ISBN 92-9043-157-1

Small Grain Temperate Cereals

M. Diekmann and C.A.J. Putter (editors)

Published in collaboration with the International Center for Agricultural Research in the Dry Areas (ICARDA)

1995. 67 pages. 17x20.8 ISBN 92-9043-158-X

Sugarcane

E.A. Frison and C.A.J. Putter (editors)

Published in collaboration with The International Society of Sugar Cane Technologists

1993. 44 pages. 17x20.8 ISBN 92-9043-155-5

Stone Fruits

M. Diekmann and C.A.J. Putter (editors)

Published in collaboration with Istituto Sperimentale per la Patologia Vegetale, Roma

1996. 109 pages. 17x20.8 ISBN 92-9043-160-1

Sweet Potato

J.W. Moyer, G.V.H. Jackson and E.A. Frison (editors)

1989. 32 pages. 17x20.8 ISBN 92-9043-149-0

Vanilla

M.N. Pearson, G.V.H. Jackson, F.W. Zettler and E.A. Frison (editors)

1991. 17 pages. 17x20.8 ISBN 92-9043-154-7

Yam

A.A. Brunt, G.V.H. Jackson and E.A. Frison (editors)

1989. 20 pages. 17x20.8 ISBN 92-9043-148-2

Conservation and Movement of Vegetatively Propagated Germplasm: *In Vitro* Culture and Disease Aspects

IBPGR Advisory Committee on *In Vitro* Storage: Report of a Subcommittee Meeting

1988. 60 pages. A4 Softcover. ISBN 92-9043-125-3

This report examines the problem and reviews the mid-1987 status of some major crops. It looks at the scope available for improvement, for example in *in vitro* transfer of germplasm and improved indexing, and makes recommendations for future action. Also included are eight reports outlining the status of a number of crops.

***Musa* Conservation & Documentation**

Proceedings of a Workshop held in Leuven, Belgium, 11-14 December 1989

1990. 112 pages. 20.8x29.2 Softcover *

Proceedings of the Inter-Centre Meeting on Germplasm Health and Movement

Edited by E.A. Frison. Held at IBPGR HQ in Rome, 23-25 October 1990

1991. 66 pages. 20.8x29.5 Softcover

***Eucalyptus* Pests and Diseases**

Report of a meeting 9-12 October 1995, Bangkok, Thailand

M. Diekmann and J.B. Ball (editors)

1996. 24 pages. 21x26.9 Softcover ISBN 92-9043-290-X

Recommandations pour l'échange sécuritaire du matériel génétique***Eucalyptus***

1997. 19 pages. 17x20.8 ISBN 92-9043-334-5

Recomendaciones para la transferencia segura de germoplasma***Eucalyptus***

1997. 19 pages. 17x20.8 ISBN 92-9043-335-3

Viroid-like Sequences of Coconut

Proceedings of a meeting 21-21 April 1997. Kajang (Kuala Lumpur), Malaysia.

M. Diekmann (editor)

1997. 56 pages. 21x29.6 ISBN 92-9043-348-5

Recognizing the necessity of resolving the issue of viroid-like sequences in coconuts, ACIAR, IPGRI and COGENT organized the workshop at which participants from laboratories in Australia, France, Italy and the Philippines presented summaries of their research and discussed the quarantine relevance of the viroid-like sequences in coconuts. The meeting participants formulated a research agenda to close apparent research gaps. The result of the workshop, including the recommendations for the treatment of coconut viroids and viroid-like sequences, are presented in this report. It is hoped that implementation of these recommendations will open the way for essential exchange and movement of coconut germplasm, while at the same time preventing the spread of pathogens.

DESCRIPTOR LISTS

IPGRI encourages the collection of data for descriptors on the first four categories of this list: *Passport, Management, Environment and site* and *Characterization*; and endorses data in these categories as those that should be available for any accession. However, the number of each of the site and environment descriptor types used will depend on the crop and their importance to the crop's description. Descriptors listed under *Evaluation* allow for a more detailed description of the accession's characters, but generally require replicated site and time trials.

Although the suggested coding should not be regarded as the definitive scheme, this format represents an important tool for a standardized characterization system and it is promoted by IPGRI throughout the world. This descriptor list is intended to be comprehensive for the descriptors that it contains. This approach assists with the standardization of descriptor definitions. IPGRI does not, however, assume that each curator will characterize accessions of their collection utilizing all descriptors given. Descriptors should be used when they are useful to the curator for the management and maintenance of the collection and/or to the users of the plant genetic resources.

This descriptor list provides an international format and thereby produces a universally understood 'language' for plant genetic resources data. The adoption of this scheme for data encoding, or at least the production of a transformation method to convert other schemes into the IPGRI format, will produce a rapid, reliable and efficient means for information storage, retrieval and communication, and will assist with the utilization of germplasm. It is recommended, therefore, that information should be produced by closely following the descriptor list with regard to: ordering and numbering descriptors, using the descriptors specified, and using the descriptor states recommended.

Almond (revised)

1985. 30 pages. 21x29.7 Softcover. *

Apple

Published in cooperation with the Commission of European Communities and United States Department of Agriculture

1982. 46 pages. 21.2x29.5 Softcover. ISBN 92-9043-104-0

Apricot

Published in cooperation with the Commission of European Communities

1984. 36 pages. 21x29.7 Softcover. *

Avocado

1995. 106 pages. 17x24 Softcover. ISBN 92-9043-220-9

Bilingual. English, Spanish in one publication.

Bambara Groundnut

Published in cooperation with the International Institute for Tropical Agriculture and the Deutsche Gesellschaft für Technische Zusammenarbeit

1987. 32 pages. B5 Softcover.

Banana

Published in cooperation with the Centre de Coopération Internationale en Recherche Agronomique pour le Développement (CIRAD) and International Network for the Improvement of Banana and Plantain (INIBAP)

1996. 55 pages. 17x24 Softcover. ISBN 92-9043-307-8

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Also available in French: **Descripteurs pour le Bananier**, and Spanish: **Descriptores para el Banano**

Barley

1994. 46 Pages. 17x24 Softcover. ISBN 92-9043-222-5

Beta

1996. 37 pages. 17x24 Softcover. ISBN 92-9043-202-0

Black pepper

1995. 80 pages. 17x24 Softcover. ISBN 92-9043-241-1

Bilingual. English, Spanish in one publication.

Brassica and Raphanus

1990. 51 pages. B5 Softcover. ISBN 92-9043-184-9

Brassica campestris L.

Published in cooperation with the Asian Vegetable Research and Development Center

1987. 27 pages. B5 Softcover.

Buckwheat

1994. 50 pages. 17x24 Softcover. ISBN 92-9043-221-7

Cardamom

1994. 52 pages. 17x24 Softcover. ISBN 92-9043-234-9

Capsicum

Published in association with Asian Vegetable Research & Development Center and Centro Agronomico Tropical de Investigacion y Esenanza

1995. 49 pages. 17x24 Softcover. ISBN 92-9043-216-0

Bilingual. English, Spanish in one publication

Cashew

1986. 33 pages. 17x24.5 Softcover.

- Cherry**
Published in cooperation with the Commission of European Communities
1985. 33 pages. 21x29.7 Softcover. *
- Chickpea**
Published in cooperation with the International Center for Agricultural Research in the Dry Areas and the International Crops Research Institute for the Semi-Arid Tropics
1993. 31 pages. 17x24.5 Softcover. ISBN 92-9043-137-7
- Citrus**
1999. 66 pages. 17x24.5 ISBN 92-9043-425-2
- Coconut**
1995. 61 pages. 17x24 Softcover. ISBN 92-9043-215-2
- Coffee**
1996. 36 pages. 17x24 Softcover. ISBN 92-9043-305-1
Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>
Also available in French: **Descripteurs du Caféier**, and Spanish: **Descriptores del Café**
- Cotton (Revised)**
1985. 17 pages. 17x24.5 Softcover.
- Cowpea**
1983. 29 pages. 16.8x24.6 Softcover.
- Cultivated Potato**
1977. 47 pages. 21.3x27.6 Softcover. *
- Echinochloa Millet**
1983. 17 pages. 17x24.5 Softcover. *
- Eggplant**
1990. 46 pages. B5 Softcover. ISBN 92-9043-200-4
Bilingual. English, French in one publication.
- Faba Bean**
Published in cooperation with the International Center for Agricultural Research in the Dry Areas
1985. 19 pages. 17x24.5 Softcover. *
- Finger Millet**
1985. 20 pages. 17x24.5 Softcover. *
- Forage Grass**
Published in cooperation with the Commission of European Communities
1985. 30 pages. 21x29.7 Softcover. *
- Forage Legumes**
Published in cooperation with the Commission of European Communities
1984. 24 pages. 21x29.7 Softcover. *
- Grapevine**
Published in cooperation with Office International de la Vigne et du Vin and International Union for the Protection of New Varieties of Plants
1997. 62 pages. 17x24.5 Softcover. ISBN 92-9043-352-3
Also available in French: **Descripteurs de la vigne**, and Spanish: **Descriptores para la vid**
- Groundnut**
Published in cooperation with the International Crops Research Institute for the Semi-Arid Tropics
1992. 125 pages. 17x24 Softcover. ISBN 92-9043-139-3
Trilingual. Spanish, English, French in one publication
- Kodo Millet**
1983. 27 pages. 17x24.5 Softcover. *
- Lentil**
Published in cooperation with the International Center for Agricultural Research in the Dry Areas
1985. 15 pages. 17x24.5 Softcover. *
- Lima Bean**
1982. 36 pages. 17x24.5 Softcover. *
- Lupin/Lupinos**
1981. 68 pages. 17x24.5 Softcover.
- Maize**
Published in cooperation with CIMMYT

1991. 86 pages. 17x24 Softcover. ISBN 92-9043-189-1
Trilingual. Spanish, English, French in one publication.

Mango

1989. 22 pages. B5 Softcover. ISBN 92-9043-183-0

Medicago (Annual)

1991. 66 pages. B5 Softcover. ISBN 92-9043-203-X
Bilingual. English and French in one publication *

Mung Bean

1980. 18 pages. 17x24.5 Softcover. *

Oat

1985. 21 pages. 17x24.5 Softcover. *

Oca

Published in cooperation with the IBPGR Programme in Latin America
1982. 23 pages. 17x24.5 Softcover. (Spanish only) *

Oil Palm

1989. 15 pages. B5 Softcover. ISBN 92-9043-187-3

Panicum miliaceum* and *P. sumatrense

1985. 14 pages. 17x24.5 Softcover

Papaya

1988. 34 pages. B5 Softcover. ISBN 92-9043-129-6

Peach

Published in cooperation with the Commission of European Communities
1985. 36 pages. 21x29.7 Softcover. *

Pear

Published in cooperation with the Commission of European Communities
1983. 39 pages. 21x29.7 Softcover. ISBN 92-9043-105-9 *

Pearl Millet

Published in cooperation with the International Crops Research Institute for the Semi-Arid Tropics
1993. 43 pages. 17x24 Softcover. ISBN 92-9043-136-9
Bilingual. English, French in one publication.

Phaseolus acutifolius

1985. 26 pages. 17x24.5 Softcover

Phaseolus coccineus

1983. 34 pages. 17x24.5 Softcover. *

Phaseolus vulgaris

1982. 32 pages. 17x24.5 Softcover. *

Pigeonpea

Published in cooperation with the International Crops Research Institute for the Semi-Arid Tropics
1993. 31 pages. 17x24.5 Softcover. ISBN 92-9043-138-5

Pineapple

1991. 41 pages. B5 Softcover. ISBN 92-9043-199-7

Pistachio (*Pistacia vera* L.)

1997. pages. 17x24 Softcover. ISBN 92-9043-332-9

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Also available in French: Descripteurs du Pistachier

***Pistacia* spp.**

(excluding *Pistacia vera* L.)

1998. 48 pages. 17x24 Softcover. ISBN 92-9043-374-4

Plum

Published in cooperation with the Commission of European Communities
1985. 31 pages. 21x29.7 Softcover. *

Potato Variety

Published in cooperation with the Commission of European Communities
1985. 27 pages. A4 Softcover. *

Quinoa

Published in cooperation with the IBPGR Programme in Latin America
1981. 18 pages. 17x24.5 Softcover. *

Rice (Descriptors for Rice *Oryza sativa* L.)

IBPGR-IRRI Rice Advisory Committee
Published by the International Rice Research Institute
1980. 21 pages. 21.6x27.1 Softcover. *

Rye and Triticale

1985. 13 pages. 17x24.5 Softcover. *

Rocket (*Eruca* spp.)

1999. 56 pages. 17x24 Softcover. ISBN 92-9043-421-X

Safflower

1983. 22 pages. B5 Softcover. *

Sesame

1981. 19 pages. 17x24.5 Softcover. *

Setaria italica* and *S. pumilia

1895. 18 pages. 17x24.5 Softcover.

Sorghum

Published in cooperation with the International Crops Research Institute for the Semi-Arid Tropics
1993. 38 pages. 17x24.5 Softcover. ISBN 92-9043-135-0
Bilingual. English, French in one publication.

Soyabean

1984. 50 pages. 17x24.5 Softcover. (Chinese/English) *

Strawberry

Published in cooperation with the Commission of European Communities
1986. 24 pages. A4 Softcover

Sunflower

1985. 33 pages. 17x24.5 Softcover. *

Sweet Potato

1991. 134 pages. 17x24.5 Softcover. ISBN 92-9043-204-7
Trilingual. Spanish, English, French in one publication

Taro (*Colocasia esculenta*)

1999. 56 pages. 17x24.5 Softcover. ISBN 92-9043-402-3
Also available in French: **Descripteurs du taro**, and Spanish: **Descriptores para el taró**

Tea

1997. 50 pages. 17x24.5 Softcover. ISBN 92-9043-244-6
Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>
Also available in French: **Descripteurs pour le théier**, and Spanish: **Descriptores para el té**

Tomato

1996. 44 pages. 17x24 Softcover. ISBN 92-9043-294-2
Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>
Also available in French: **Descripteurs de la Tomate**, and Spanish: **Descriptores para el Tomate**

Tropical Fruit

Published in cooperation with the Southeast Asia Regional Committee
1980. 11 pages. 17x24.5 Softcover. *

Vigna aconitifolia* and *V. trilobata

1985. 39 pages. 17x24.5 Softcover.

***Vigna mungo* and *V. radiata* (Revised)**

1985. 23 pages. 17x24.5 Softcover. *

Walnut

1994. 54 pages. 17x24 Softcover. ISBN 92-9043-211-X

Wheat (Revised)

Published in cooperation with the Commission of European Communities
1985. 12 pages. 17x24.5 Softcover. *

Wheat and *Aegilops*

Published in cooperation with the Information Sciences/Genetic Resources Program
1978. 25 pages. 19x25 Softcover. *

White Clover

1992. 52 pages. 17x24 Softcover. ISBN 92-9043-201-2

Wild and cultivated Carrots

(*Daucus carota* L.)

1999. 65 pages. 17x24 Softcover. ISBN 929043-392-2

Also available in French: Descripteurs des carottes sauvages et cultivées, and Spanish: Descriptores de la zanahoria silvestre y cultivada

Winged Bean

Published in cooperation with the Regional Committee for Southeast Asia

1979. 24 pages. 17x24.5 Softcover. *

Xanthosoma

1989. 30 pages. B5 Softcover. ISBN 92-9043-132-6

Yam

Published in cooperation with International Institute of Tropical Agriculture, Ibadan, Nigeria.

1997. 61 pages. 17x24.5 Softcover. ISBN 92-9043-353-1

Also available in French: Descripteurs de l'igname, and Spanish: Descriptores para el ñame

DIRECTORIES OF GERMPLASM COLLECTIONS

These directories list the germplasm holdings of specific crops and food plants in institutes around the world. The information contained in the books is provided by the curators of the collections and each entry is arranged in a common format. The production of these data in this form is an attempt to assess total world holdings. The information should aid scientists in making contact with other workers involved in the same crop. The information from the Directories of Germplasm Collections is now available for on-line searching from IPGRI Web site, at: <http://www.cgiar.org/ipgri/doc/dbintro.htm>

3.I Cereals: Wheat

G. Ayad, J. Toll and J.T. Williams
1980. 28 Pages. 21.6x27.7 Softcover *

3.II Cereals: Maize

G. Ayad, J. Toll and J.T. Esquinas-Alcazar
1980. 23 pages. 21.5x27.5 Softcover. *

3.III Cereals: Rice

J. Toll, N.M. Anishetty and G. Ayad
1980. 20 Pages. 21.8x27.5 Softcover. *

3.IV Cereals: Sorghum & Millets

N.M. Anishetty, G. Ayad and J. Toll
1981. 37 pages. 21.5x27.7 Softcover. *

5.I Industrial Crops: Cacao, Coconut, Pepper, Sugarcane and Tea

J.T. Williams and A.B. Damania
1981. 50 pages. 21.6x28 Softcover. *

3.V Cereals: Barley

N.M. Anishetty, J. Toll, G. Ayad and J.R. Witcombe
1982. 26 pages. 21.5x27.7 Softcover. *

1.II Food Legumes (Soyabean)

G.A. Juvik, R.L. Bernard and H.E. Kauffman
Published in cooperation with the University of Illinois, Urbana-Champaign, USA
1985. 53 pages. 21x29.7 Softcover. *

2. Root and Tuber Crops: Aroids, Cassava, Potato, Sweet Potato, Yams and Others

T. Lawrence, J. Toll and D.H. van Sloten
1986. 178 pages. 21x29.7 Softcover. *

5.II Industrial Crops: Beet, Coffee, Oil Palm, Cotton and Rubber

E. Bettencourt and J. Konopka
1988. 61 pages. 21x29.7 Softcover. ISBN 92-9043-127-X

1.I Food Legumes: *Arachis, Cajanus, Cicer, Lens, Lupinus, Phaseolus, Pisum, Psophocarpus, Vicia* and *Vigna*

E. Bettencourt, A.B. Damania and J. Konopka
1989. 190 Pages. 21x29.7 Softcover. ISBN 92-9043-133-4 *

6.II Temperate Fruits and Tree Nuts: *Actinidia, Amelanchier, Carya, Castanea, Corylus, Cydonia, Diospyros, Fragaria, Juglans, Malus, Mespilus, Morus, Olea, Pistacia, Prunus, Punica, Pyrus, Ribes, Rosa, Rubus, Sambucus, Sorbus, Vaccinium* and others

E. Bettencourt and J. Konopka
1989. 296 pages. 21x29.7 Softcover. ISBN 92-9043-144-X

4. Vegetables: *Albemoschus, Allium, Amaranthus*, Brassicaceae, *Capsicum*, Cucurbitaceae, *Lycopersicon, Solanum* and other vegetables

E. Bettencourt and J. Konopka
1990. 250 pages. 21x29.7 Softcover. ISBN 92-9043-194-6 *

3. Cereals: *Avena, Hordeum*, Millets, *Oryza, Secale, Sorghum, Triticum, Zea* and Pseudocereals

E. Bettencourt and J. Konopka
1990. 264 pages. 21x29.7 Softcover. ISBN 92-9043-195-4

6.I Tropical and Subtropical Fruits and Tree Nuts: *Annona, Avocado, Banana* and Plantain, Breadfruits, Cashew, *Citrus, Date, Fig, Guava, Mango, Passionfruit, Papaya, Pineapple* and others

E. Bettencourt, Th. Hazekamp and M.C. Perry
1992. 337 pages 21x29.7 Softcover. ISBN 92-9043-223-3 (replaces 1984 Directory) *

7. Forages: Legumes, Grasses, Browse plants and others

E. Bettencourt, Th. Hazekamp and M.C. Perry
1992. 356 pages. 21x29.7 Softcover. ISBN 92-9043-224-1 (replaces 1984 Directory).

Buckwheat

M. Zhou and Z. Zhang
1996. 26 pages. 21x29.7 Softcover.
Available from IPGRI Office for East Asia and from IPGRI Office for Asia, the Pacific and Oceania

Safflower**Germplasm collection directory**

Z. Zhang and R.C. Johnson, compilers

1999. 18 pages. 21x29.7 Softcover. ISBN 92-9043-422-8

Available from IPGRI Office for East Asia and from IPGRI Office for Asia, the Pacific and Oceania

REGIONAL MEETINGS

IPGRI develops its activities in association with national governments and those in adjacent countries which share common cultural and agricultural features. IPGRI attempts to organize such regional cooperation in countries located within regions of crop diversity. The following publications are full reports of IPGRI-sponsored activities.

Report of an IBPGR Workshop on South Asian Plant Genetic Resources

July 1978. 56 pages. 21x28 Softcover.

The aims and objectives of this Workshop included discussions on collecting, conservation, evaluation, information and other activities in plant genetic resources of South Asia and further development of these activities on a regional basis.

Report of South Asia Liaison Officers Meeting

August 1982. 39 pages. 21.5x27.5 Softcover.

This meeting was held to draw up a plan of action to assist in IBPGR strengthening of regional and national programmes on crop genetic resources.

Report of Regional Meeting of Liaison Officers for the Mediterranean Programme

September 1982. 23 pages. 21.7x28 Softcover.

This meeting was called so that IBPGR could be advised on the future programme as past experience had shown that it was essential to establish strong national programmes as the basis for regional activities.

1983 Rice Germplasm Conservation Workshop

Published in cooperation with the International Rice Research Institute

1983. 109 pages. 15.2x22.8 Softcover.

This Workshop, held at IRRI 25-26 April 1983, represents the second joint venture of IRRI and IBPGR, both concerned with revitalizing the collecting activities toward completion of the conservation of diverse rice germplasm.

Report of the Fifth Regional Committee Meeting for Southeast Asia

September 1983. 91 pages. A4 Softcover.

The report reviews the activities on collecting, conservation, evaluation, documentation and utilization of genetic resources, training, publication and the expansion of the Southeast Asian programme.

Report of a Second Meeting of the Cocoa Working Group

June 1984. 34 pages. 21.5x29 Softcover.

Included in the sections in this report are topics such as project action in Peru, the major collectors of cocoa, a summary of the cocoa research projects involving genetic resources or *in vitro* techniques and also a brief report on the *in vitro* culture of cocoa.

Crop Genetic Resources of East Asia

S. Suzuki (editor)

1988. 286 pages. 17x25 Hardback. ISBN 92-9043-123-7

This publication uses the proceedings of a conference held in Tsukuba in Japan in November, 1987 to put forward an analysis of plant genetic resources activities in the area and a strategy for the future.

(Limited availability)

Sesame Biodiversity in Asia

Conservation, Evaluation and Improvement

R.K. Arora and K.W. Riley (editors)

1994. 209 pages. 16x24 Softcover.

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

Sesame is one of the oldest oilseed crops and has been under cultivation in Asia from ancient times. Realizing the importance of sesame improvement in Asia as an oilseed crop, IPGRI Regional office for Asia, the Pacific and Oceania, organized a workshop on 'Sesame Evaluation and Improvement' jointly with the ICAR/NBPGR-the National Bureau of Plant Genetic Resources, New Delhi, held at Nagpur & Akola, India, 28-30 September 1993. This publication contains the proceedings of this workshop section.

Safeguarding the Genetic Basis of Africa's Traditional Crops

Proceedings of a CTA/IPGRI/KARI/UNEP Seminar, 5-9 October 1992, Nairobi, Kenya

A. Putter (editor)

1994. 211 pages. 21x29 pages. Softcover. ISBN 92-9081-103-X

African subsistence farmers have traditionally relied on diversity to ensure the stability of their production systems. They have developed diverse landraces and cropping practices adapted to local climatic, edaphic, social and cultural situations. They also harvest food from a wide variety of wild plants. However, national food policies in Africa still tend to be based on a few well-researched, uniform varieties of staple crops, rather than on the utilization of farmers' traditional crops and varieties. This has tended to erode not only the genetic diversity that these represent, but also the knowledge that local people have about this diversity. In recent years these developments have given rise to growing concern. How can the diversity of traditional African agriculture be protected, so that it can be harnessed for development? A set of recommendations was adopted by participants of the seminar, which recognized the need for cooperative action between formal and informal sectors.

Expert consultation on Tropical Fruit Species of Asia

R.K. Arora and V. Ramanatha Rao (editors)

1995. 116 pages. B5 Softcover. ISBN 92-9043-249-7

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

The proceedings in this volume form a useful source of information on the status of tropical fruit trees in several countries in the Asian region, as well as a synthesis of the discussion held during an expert consultation at MARDI, Kuala Lumpur, Malaysia, 17-19 May, 1994. As a result of this meeting, IPGRI is in a better position to work in close partnership with National Programmes to support and carry out activities that will strengthen the conservation and use of the priority fruit tree species.

Proceedings of East Asia Coordinators Meeting on Plant Genetic Resources

23-25 September 1995. Beijing, China

V.R. Rao, K.W. Riley, Zhang Zongwen, Zhou Ming-De (Editors)

1995. 132 pages. 20.5x29 Softcover. ISBN 92-9043-257-8

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

In order to review progress and develop future strategies for East Asia on plant genetic resources conservation and utilization, IPGRI office for Asia, the Pacific and Oceania/East Asia organized an IPGRI East Asia Coordinators Meeting on plant genetic resources, jointly with the Chinese Academy of Agricultural Sciences. National coordinators and specialists from China, Japan, Mongolia, Democratic People's Republic of Korea and Republic of Korea participated in the meeting. It is hoped that the deliberations of national coordinators, experts in plant genetic resources and representatives of international organizations during the meeting and the recommendations of the meeting will promote the goals of safe conservation and effective use of plant genetic resources in the region.

Proceedings of the South Asia National Coordinators Meeting on Plant Genetic Resources

10-12 January 1995. Dhaka, Bangladesh

R.K. Arora and V. Ramanatha Rao (Editors)

1995. 162 pages. 21x28 Softcover. ISBN 92-9043-274-8

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

These Proceedings contain synthesized information on country reports and on specific topics of interest both to national programmes and IPGRI, such as on horticultural crops. These will provide good base material not only for PGR Institutes but also for policy-makers. It is hoped that such participation of National PGR Coordinators will result in more effective action to achieve our shared goal to strengthen the conservation and use of plant genetic resources of the region.

Bamboo and Rattan Genetic Resources and Use

Proceedings of the First INBAR Biodiversity, Genetic Resources and Conservation Working Group

7-9 November 1994, Singapore

V. Ramanatha Rao and A.N. Rao (editors)

1996. 77 pages. 21x29 Softcover. ISBN 92-9043-253-5

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

Lathyrus Genetic Resources in Asia

Proceedings of a Regional Workshop

Raipur, India

27-29 December 1995

R.K. Arora, P.N. Mathur, K.W. Riley and Y. Adham (Editors)

1996. 168 pages. 21x29 Softcover. ISBN 92-9043-311-6

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

Bamboo and Rattan Genetic Resources and Use

Proceedings of the Second INBAR-IPGRI Biodiversity, Genetic Resources and Conservation Working Group

26-29 April, 1995, Serpong, Indonesia

V. Ramanatha Rao and A.N. Rao (editors)

1996. 77 pages. 21x29 Softcover. ISBN 981-00-8386-6

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

Durio - A Bibliography Review

Michael J. Brown

1997. 188 pages. 15x22.7 Softcover. ISBN 92-9043-318-3

Available from IPGRI Office for South Asia

Bamboo, People & The Environment

Proceedings of the Vth International Bamboo Workshop and the IV International Bamboo Congress

19-22 July 1995. Ubud, Bali, Indonesia

I.V. Ramanuja Rao and Cherla B. Sastry (editors)

1996. 4 Volumes. 15x21 Softcover. ISBN 81-86247-15-7

Available from International Network for Bamboo and Rattan, 17 Jor Bagh, New Delhi 11003, India

Rattan - Taxonomy, Ecology, Silviculture, Conservation and Biotechnology

Proceedings of a Training Courses cum Workshop

Sarawak, Sabah, April 14-26, 1996

A.N. Rao and V. Ramanatha Rao, editors

1997. 255 pages. 21x30 Softcover. ISBN 92-9043-350-7

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

Bamboo and Rattan Genetic Resources in Certain Asian Countries

K. Vivekanandan, A.N. Rao and V. Ramanatha Rao, editors

1988. 229 pages. 21x30 Softcover. ISBN 92-9043-364-7

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

Tropical Fruits in Asia**Diversity, Maintenance, Conservation and Use**

Proceedings of the IPGRI-ICAR-UTFANET Regional Training Course on the Conservation and Use of Germplasm of Tropical Fruits in Asia held at Indian Institute of Horticultural Research

18-31 May 1997, Bangalore, India

R.K. Arora and V. Ramanatha Rao, editors

1998. 272 pages. 21x30 Softcover. ISBN 92-9043-366-3

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

Plant Genetic Resources - Bangladesh Perspective

Proceedings of a National Workshop on Plant Genetic Resources

26-29 August 1997, Dhaka, Bangladesh

M.G. Hossain, R.K. Arora and P.N. Mathur (editors)

Published by: Bangladesh Agricultural Research Council (BARC) and IPGRI Office for South Asia

1998. 287 pages. 21x30 Softcover.

Copies available from Bangladesh Agricultural Research Council, Farmgate, New Airport Road, Dhaka 1215, GPO Box 3041, Bangladesh and IPGRI Office for South Asia.

Proceedings of the COGENT regional coconut genebank planning workshop

26-28 February 1996. Pekanbaru, Riau, Indonesia

V.Ramanatha Rao and P. Batugal (editors)

1998. 115 pages. 20.5x29 Softcover. ISBN 92-9043-265-5

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

The Role of Bamboo, Rattan & Medicinal Plants in Mountain Development

INBAR Technical Report No. 15

Proceedings of a workshop held at the Institute of Forestry, Pokhara, Nepal 15-17 May 1996

Madhav Karki, A.N. Rao, V. Ramanatha Rao and J.T. Williams (editors)

1997. 232 pages. 15x21 Softcover. ISBN 81-86247-21-1

Available from International Network for Bamboo and Rattan, 17 Jor Bagh, New Delhi 11003, India

Lathyrus Genetic Resources Network

Proceedings of a IPGRI-ICARDA-ICAR Regional Working Group Meeting

8-10 December 1997. New Delhi, India

P.N. Mathur, V. Ramanatha Rao and R.K. Arora (editors)

2000. 85 pages. 20.5x29 Softcover. ISBN 92-9043-394-9

Available from IPGRI Office for South Asia

Underutilized Edible Fruit and Nuts

An inventory of genetic resources in their regions of diversity

O.P. Pareek, Suneel Sharma and R.K. Arora

1998. 235 pages. 20.5x28 Softcover. ISBN 92-9043-367-1

Available from IPGRI Office for South Asia

Neglected leafy vegetables in Africa. Vol. 1.

Traditional African Vegetables: Directory of Research and Development Specialists

H. de Koeijer (compiler), J.A. Chwya and A.F. Attere

1999. 20.5x29 Spiralbound. ISBN 92-9043-393-0

Available from IPGRI Regional Office for Sub-Saharan Africa

Promoting multi-purpose uses and competitiveness of the coconut

Proceedings of a workshop

26-29 September 1996

Chumphon, Thailand

Pons A. Batugal, V. Ramanatha Rao and C. Bong (editors)

1998. 190 pages. 21x30 Softcover. ISBN 92-9043-382-5

Available from IPGRI Regional Office for Asia, the Pacific and Oceania

Coconut breeding

Papers presented at a workshop on

standardization of coconut breeding research techniques

20-25 June 1994

Port Bouet, Côte d'Ivoire

Pons A. Batugal and V. Ramanatha Rao (editors)

1998. 150 pages. 21x30 Softcover. ISBN 92-9043-383-3

Available from IPGRI Regional Office for Asia, the Pacific and Oceania

Coconut embryo *in vitro* culture

Proceedings of the first workshop on embryo culture

27-31 October 1997

Banao, Guinobatan, Albay, Philippines

Pons A. Batugal and F. Engelmann (editors)

1998. 164 pages. 21x30 Softcover. ISBN 92-9043-385-X

Available from IPGRI Regional Office for Asia, the Pacific and Oceania

Priority Species of Bamboo and Rattan

A.N. Rao, V. Ramanatha Rao and J.T. Williams, editors

1998. 95 pages. 21x30 Softcover. ISBN 92-9043-491-5

Published in collaboration with INBAR

Available from IPGRI Regional Office for Asia, the Pacific and Oceania; and from INBAR, PO Box 9799, Beijing 1000101, P.R. China

Bamboo and Rattan Genetic Resources and Use

Proceedings of the Third INBAR-IPGRI Biodiversity, Genetic Resources and Conservation Working Group Meeting
24-27 August 1997, IPGRI-APO Serdang, Malaysia

And Research Reports

A.N. Rao and V. Ramanatha Rao (editors)

1999. 203 pages. 21x29 Softcover. ISBN 92-9043-413-9

Available from IPGRI Regional Office for Asia, the Pacific and Oceania and IPGRI Office for South Asia.

The Origins of Agriculture and Crop Domestication**The Harlan Symposium**

A.B. Damania, J. Valkoun, G. Willcox and C.O. Qualset

1998. 352 pages. ISBN 92-9127-084-9

We need to understand the past if we are to manage the future; it is therefore necessary to analyze why humans suddenly became sedentary, practised agriculture and evolved civilizations. Wheat and barley together with lentil were among the earliest crops to be domesticated in the arc of land that connects the river valleys of the Euphrates and the Tigris with that of the Jordan. It has become increasingly clear that studies on crop-plant domestication can no longer rely solely on archaeological data but will have to combine the findings of archaeobotanists, archaeozoologists, anthropologists and ecologists to put together all the pieces of the puzzle of how agriculture actually began. A Symposium on the "Origins of Agriculture and Domestication of Crop Plants in the Near East" was held at the International Center for Agricultural Research in the Dry Areas (ICARDA), 10-14 May 1997. The Symposium was successful in assembling outstanding speakers who delivered very interesting presentations that throw new light on several topics. Their papers are presented in this volume in several sections, grouped under the headings of: Centers of Origin of Crop Plants and Agriculture, Near-Eastern Crop Diversity and its Global Migration, Archaeobotanical Evidence for Agricultural Transitions, Domestication of Crop Plants, Historical Aspects and Crop Evolution, and Conservation of Wild Progenitors. The Symposium heard evidence that the climate was wetter in the Near East than it is today. Given the possible climatic changes we face in the next century or two, we should ask whether we face another quantum leap in the way we grow food. The volume is dedicated to Jack R. Harlan (1917-1998), Plant Explorer, Archaeobotanist, Geneticist and Plant Breeder.

Copies of this book are available at US\$ 25 per copy from ICARDA, PO Box 5466, Aleppo, Syria. Email: <icarda@cgiar.org>

Vers une approche régionale des ressources génétiques forestières en Afrique sub-saharienne

A.S. Ouédraogo et J.-M. Boffa, éditeurs

1999. 299 pages. 21x29 Softcover. ISBN 92-9043-409-0

Actes du premeir atelier régional de formation sur la conservation et l'utilisation durable des ressources génétiques forestières en Afrique de l'Ouest, l'Afrique Centrale et Madagascar - 16-27 mars 1998 - Centre National de Semences Forestières, Ougadougou, Burkina Faso.

PLANT GENETIC RESOURCES in EUROPE**Proceedings of a Joint FAO/IPGRI workshop on *ex situ* germplasm conservation**

7-9 October 1993, Prague, Czech Republic

Emile A. Frison and Michael Bolton (editors)

1994. 70 pages. 21x29 Softcover. ISBN 92-9043-245-4

Representatives of 13 east European countries participated in a workshop which focused on two aspects of *ex situ* plant genetic resources conservation: (i) the organization and management of national programmes and genebanks, and (ii) genebank documentation.

International Technical Conference on Plant Genetic Resources: Preparatory process for Europe

1996. 87 pages. 21x29 Softcover. ISBN 92-9043-273-X

This publication contains three documents which resulted at the regional level from the preparatory process to the International Technical Conference on Plant Genetic Resources (June 1996 in Leipzig, Germany). The Regional Synthesis on the Status of PGR in Europe which was prepared by IPGRI on the basis of 40 Country Reports submitted to FAO in 1995 served as a working document for the Preparatory Meeting for Europe held in September 1995 in Nitra, Slovakia. The report of this meeting which contains the Region's recommendations for the Global Plan of Action, is the second document in this publication. The Recommendation of the European Forest Genetic Resources Workshop held in November 1995 in Sopron, Hungary deal specifically with the forest genetic resources aspects of the preparatory process. They are included as third document.

Implementation of the Global Plan of Action in Europe**Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture**

Proceedings of the European Symposium

30 June – 3 July 1998. Braunschweig, Germany

T. Gass, L. Frese, F. Begemann and L. Lipman (compilers)

1999. 396 pages. 21x29 Softcover. ISBN 92-9043-406-6

The Global Plan of Action on Plant Genetic Resources for Food and Agriculture (GPA) adopted in Leipzig, Germany in June 1996, is probably the single most important milestone in achieving a global multilateral system for plant genetic resources. Throughout the preparatory process leading to the Leipzig Conference, government agencies, NGOs, international organizations and scientific institutions have invested much effort in making the GPA realistic and useful. In implementing the GPA, the European region has to face numerous challenges. The large number of very diverse countries, their high level of interdependence, and the heterogeneity of national needs and resources make Europe "a world in a region", a laboratory in which the lessons that are being learned are likely to be relevant for the rest of the world community. The European Symposium on PGRFA held in June 1998 in Braunschweig, Germany, was intended to be a forum for the exchange of experiences and ideas and an occasion to take stock of the implementation of the GPA at the national and regional levels. Reading these proceedings, we will no doubt agree that these goals were successfully reached. Initiatives such as the one taken here by European countries are essential if, as an international community, we want to advance towards the goals that we have set in Leipzig and give substance to the policy framework which is currently under negotiation.

EUROPEAN COOPERATIVE PROGRAMME FOR CROP GENETIC RESOURCES NETWORK (ECP/GR)

The European Cooperative Programme for Crop Genetic Resources Networks (ECP/GR) was founded in 1980 on the basis of the recommendations of UNEP, FAO and the EUCARPIA Genebank Committee. ECP/GR is a collaborative programme among most European countries aimed at ensuring the long term conservation and facilitating the increased utilization of plant genetic resources in Europe. The programme, which is entirely financed by the participating countries and is coordinated by IPGRI, operates through ten broadly focused networks dealing with groups of crops or general themes related to plant genetic resources

General Publications

ECP/GR

1996. Brochure

Directory of European Institutions Holding Crop Genetic Resources Collections (Fourth Edition)

Vol. 1. Holdings

1995. 499 pages. 21x29.7 Softcover. ISBN 92-9043-259-4

E.A. Frison and J. Servinsky (editors)

Directory of European Institutions Holding Crop Genetic Resources Collections (Fourth Edition)

Vol. 2. Index

1995. 87 pages. 21x29.7 Softcover. ISBN 92-9043-259-4

E.A. Frison and J. Servinsky (editors)

Report of the Technical Consultative Committee (Fifth meeting)

26-28 August 1993. 43 pages. 21x29.7 Softcover.

Report of the Technical Consultative Committee (Sixth meeting)

21-23 September 1995. 32 pages. 21x29.7 Softcover.

Cereals Network

Report of a Working Group on *Avena* (Third meeting)

7-9 March 1989. 35 pages. 21.1x29.7 Softcover.

Report of a Working Group on *Avena* (Fourth meeting)

26-28 May 1993. 50 pages. 21.1x29.7 Softcover. ISBN 92-9043-230-6 *

Report of a Working Group on *Barley* (Second meeting)

27-29 May 1986. 17 pages. 21.5x29.6 Softcover.

Report of a Working Group on *Barley* (Third meeting)

18-20 April 1989. 61 pages. 21x29.7 Softcover.

Report of a Working Group on *Barley* (Fourth meeting)

10-12 May 1993. 53 pages. 21x29.7 Softcover. ISBN 92-9043-231-4

Report of a Working Group on *Barley* (Fifth meeting)

10-12 July 1997.

1999. 121 pages. 21x29.7 Softcover. ISBN 92-9043-405-8

Report of a Workshop on Wheat Genetic Resources

21-23 March 1996. Paris, France

46 pages. 21x29 Softcover. ISBN 92-9043-313-2

T. Gass, M. Ambrose, I. Faberová, A. Le Blanc and J. Weibull, compilers

Maize Genetic Resources in Europe

Report of a workshop

28-29 May 1996. Rome, Italy

57 pages. 21x29 Softcover. ISBN 92-9043-306-X

E. Lipman, R.H. Ellis and T. Gass, compilers

Challenges in rye germplasm conservation

Proceedings of an International Conference on Crop Germplasm Conservation with Special Emphasis on Rye, and an ECP/GR Workshop

2-6 July 1996

Warsaw/Kostancin-Jeziorna, Poland

1998. 120 pages. Softcover. ISBN 92-9043-371-X

T. Gass, W. Podyma, J. Puchalski and S.A. Eberhart, compilers

Report of a Working Group on *Avena*

Fifth Meeting

7-9 May 1998. Vilnius, Lithuania

1998. 81 pages. Softcover. ISBN 92-9043-386-8

L. Maggioni, M. Leggett, S. Bücken and E. Lipman, compilers

Forages Network

Report of a Working Group on Forages (Third meeting)

10-12 February 1989. 88 pages. B5 Softcover.

Report of a Working Group on Forages (Fourth meeting)

28-30 October 1991. 91 pages. 21x29.7 Softcover.

Report of a Working Group on Forages (Fifth Meeting)

31 Mar. 2 Apr. 1995. Hissar, Bulgaria

1995. 140 pages. 21x29.7 Softcover. ISBN 92-9043-260-8

Report of a Working Group on Forages (Sixth Meeting)

6-8 March 1997. Beitostølen, Norway

1998. 194 pages. 21.2x29.8 Softcover. ISBN 92-9043-379-5

L. Maggioni, P. Marum, R. Sackville Hamilton, I. Thomas, T. Gass and E. Lipman (compilers)

A Guide to the European Forage Databases

1991. 60 pages. 21.2x29.8 Softcover. ISBN 92-9043-209-8

Vegetables Network

Report of a Working Group on *Allium*

29-31 May 1984. 11 pages. 21.4x28.1 Softcover.

Report of a Working Group on *Allium* (Fourth meeting)

10-14 June 1991. 29 pages. 21.4x28.1 Softcover.

Report of a Working Group on *Allium* (Fifth meeting)

25-27 May 1995. Skierniewice, Poland

82 pages. 21x29.7 Softcover. ISBN 92-9043-276-4

Report of a Working Group on *Allium* (Sixth meeting)

23-25 October 1997. Plovdiv, Bulgaria

102 pages. 30x21.5. ISBN 92-9043-398-1

European Catalogue of *Allium*

Edited by D. Astley, Institute of Horticultural Research, Wellesbourne, UK.

June 1988.

Report of a Working Group on *Brassica* (First Meeting)

21-23 May 1991. 52 pages. 21x29.7 Softcover.

Report of a Working Group on *Brassica* (Second Meeting)

13-15 November 1994. Lisbon. Portugal

1995. 87 pages. 21x29.7 Softcover. ISBN 92-9043-252-7

Report of a Working Group on *Brassica* (Third Meeting)

27-29 November 1996. Rome, Italy

1997. 92 pages. 21x29.7 Softcover. ISBN 92-9043-340-X

Report of an Extraordinary meeting of the ECP/GR Working Group on Brassica

22 September 1997. Rennes, France

1999. 12 pages. 21x29.7 Softcover.

Report of a Working Group on Umbellifer crops genetic resources

31 August 1997. Kraków, Poland

1999. 52 pages. 21x29.7 Softcover.

D. Astley, compiler

Grain Legumes Network

Report of a Working Group on Grain Legumes (First Meeting)

14-16 July 1995. Copenhagen, Denmark

1996. 104 pages. 21x29.7 Softcover. ISBN 92-9043-289-6

T. Gass, M. Ambrose, J. Le Guen, A. Hadjichristodoulou and S. Blixt (Compilers)

Fruit Network

Report of a Working Group on *Prunus* (Fourth meeting)

30 November-2 December 1992. Bordeaux, France

31 pages. 21x29.7 Softcover.

Report of a Working Group on *Prunus* (Fifth meeting)

1-3 February 1996. Izmir, Turkey
70 pages. 21x29.7 Softcover. ISBN 92-9043-293-4
T. Gass, K.R. Tobutt and A. Zanetto (compilers)

Report of an extraordinary meeting of the ECP/GR *Prunus* Working Group and the First Coordination Meeting of the Project GENRES 61

28-30 October 1996. Rome, Italy
29 pages. 21x29.7 Softcover.
L. Maggioni, A. Zanetto, F. Dosba and T. Gass (compilers)

European *Malus* Germplasm

21-24 June 1995. Wye College, University of London
119 pages. 21x29.7 Softcover. ISBN 92-9043-271-3
Helen J. Case (editor)

Report of a working Group on *Malus/Pyrus* (First meeting)

15-17 May 1997. Dublin, Ireland
1998. 106 pages. 21x29.7 Softcover. ISBN 92-9043-376-0
L. Maggioni, R. Janes, A. Hayes, T. Swinburne and E. Lipman (compilers)

Report of an extraordinary meeting of the ECP/GR *Prunus* Working Group and the Second Coordination Meeting of the Project GENRES 61

13-15 November 1997. Zaragoza, Spain
1998. 47 pages. 21x29.7 Softcover.
A. Zanetto, F. Dosba, K. Tobutt and L. Maggioni (compilers)

Extraordinary meeting of the ECP/GR *Prunus* Working Group and Third Coordination Meeting of the Project GENRES 61

3-5 December 1998. Rheinfelden, Switzerland
1999. 42 pages. 21x29.7 Softcover.
F. Dosba, K. Tobutt, A. Zanetto, F. Grassi and L. Maggioni (compilers)

Industrial Crops Network**Report of a Working Group on Sunflower (Third meeting)**

30 July 1988. 38 pages. 21.2x29.8 Softcover.

Report of a Working Group on Sunflower (Fourth meeting)

11-12 May 1991. 32 pages. 21x29.7 Softcover.

Report of a *Beta* Workshop

18-19 November 1987. 16 pages. 21x29.7 Softcover.

Documentation and Information Network**Descriptions of plant genetic resources documentation systems in eastern European countries**

1995. 95 pages. 21x29.7 Softcover. ISBN 92-9043-251-9
M.W.M. Jongen and Th. J.L. van Hintum

Central Crop Databases: Tools for Plant Genetic Resources Management

Report of a Workshop, 13-16 October 1996, Budapest, Hungary
E. Lipman, M.W.M. Jongen, Th.J.L. van Hintum, T. Gass and L. Maggioni (compilers)
1997. 100 pages. 21x29 Softcover. ISBN 92-9043-320-5

INTERNATIONAL CROP NETWORK SERIES

International Crop Network Series. 1

Report of an International Barley Working Session

21 April 1989. 24 pages. 21x29.6 Softcover. ISBN 92-9043-190-3

International Crop Network Series. 2

Report of a Workshop on the Genetic Resources of Wild *Arachis* Species

Including Preliminary Descriptors for *Arachis* produced by IBPGR and ICRISAT

29 Feb.-2 March 1989. 54 pages. 21x29.7 Softcover. ISBN 92-9043-193-8

International Crop Network Series. 3

Report of an International Beta Genetic Resources Workshop

7-10 February 1989. 109 pages. 21x29.7 Softcover. ISBN 92-9043-192-X

International Crop Network Series. 4

Crop Networks. Searching for New Concepts for Collaborative Genetic Resources Management

3-6 December 1990. 131 pages. 21x29.7 Softcover. ISBN 92-9043-130-X

International Crop Network Series. 5

Report of an International Workshop on: Okra Genetic Resources

8-12 October 1990. 133 pages. 21x29.7 Softcover. ISBN 92-9043-210-1

International Crop Network Series. 6

Papers of the IBPGR Workshop on: Buckwheat Genetic Resources in East Asia

18-20 September 1991. 104 pages. 21x29 Softcover. ISBN 92-9043-213-6

(Chinese version available)

International Crop Network Series. 7

A report on the 2nd International Beta Genetic Resources Network

24-28 June 1991. 154 pages. 21x29.7 Softcover. ISBN 92-9043-214-4

International Crop Network Series. 8

Papers of the IBPGR Workshop on: Coconut Genetic Resources

8-11 October 1991. 78 pages. 21x29.7 Softcover. ISBN 92-9043-217-9

International Crop Network Series. 9

Report of an International Workshop on: Barley Genetic Resources

20-21 July 1991. 49 pages. 21x29.7 Softcover. ISBN 92-9043-219-5

International Crop Network Series. 10

Report of the first meeting of the International Network for Cassava Genetic Resources

18-23 August 1992. 179 pages. 21x29.7 Softcover. ISBN 92-9043-237-3

International Crop Network Series. 11

A report on the 3rd International Beta Genetic Resources Network and World Beta Network Conference

4-6 August 1993. 76 pages. 21x29.7 Softcover. ISBN 92-9043-247-0

International Crop Network Series. 12

A report on the 4th International Beta Genetic Resources Network and World Beta Network Conference

28 February - 3 March 1996. 104 pages. 21x29.7 Softcover. ISBN 92-9043-368-X

EUROPEAN FOREST GENETIC RESOURCES PROGRAMME (EUFORGEN)

The European Forest Genetic Resources Programme (EUFORGEN) is a collaborative programme among European countries aimed at ensuring the effective conservation and the sustainable utilization of forest genetic resources in Europe. It was established to implement Resolution 2 of the Strasbourg Ministerial Conference on the Protection of Forests in Europe. EUFORGEN is financed by participating countries and is coordinated by IPGRI, in collaboration with the Forestry Department of FAO. It facilitates the dissemination of information and various collaborative initiatives. The programme operates through networks in which forest geneticists and other forest specialists work together to analyze needs, exchange experiences and develop conservation objectives and methods for selected species. The networks also contribute to the development of appropriate conservation strategies for the ecosystem to which these species belong. Network members and other scientists and forest managers from participating countries carry out an agreed workplan with their own resources as inputs in kind to the Programme. EUFORGEN is overseen by a Steering Committee composed of National Coordinators nominated by the participating countries.

***Populus nigra* Network**

Report of the first meeting
3-5 October 1994. Izmit, Turkey
1995. 52 pages. 21x29.7 Softcover. ISBN 92-9043-254-3
E. Frison, F. Lefèvre, S. de Vries and J. Turok (compilers)

***Picea abies* Network**

Report of the first meeting
16-18 March 1995. Tatra National Park, Starà Lesná, Slovakia
1995. 96 pages. 21x29.7 Softcover. ISBN 92-9043-256-X
J. Turok, V. Koski, L. Paule and E. Frison (compilers)

***Quercus suber* Network**

Report of the first two meetings
1-3 December 1994 and 26-27 February 1995. Rome, Italy
1995. 41 pages. 21x29.7 Softcover. ISBN 92-9043-265-9
E. Frison, M.C. Varela and J. Turok (compilers)

Report of the Steering Committee

First Meeting
19-20 November 1995. Sopron, Hungary
1996. 27 pages. 21x29.7 Softcover. *
J. Turok, C. Palmberg-Lerche, Cs. Mátyás, M. Arbez, E. Frison (compilers)

***Populus nigra* Network**

Report of the second meeting
10-12 September 1995. Casale Monferato, Italy
1996. 27 pages. 21x29.7 Softcover. ISBN 92-9043-272-1
J. Turok, F. Lefèvre, L. Cagelli and S. de Vries (compilers)

Noble Hardwoods Network

Report of the first meeting
24-27 March 1996. Escherode, Germany
1996. 172 pages. 21x29.7 Softcover. ISBN 92-9043-291-8
J. Turok, G. Eriksson, J. Kleinschmit and S. Canger (compilers)

***Populus nigra* Network**

Report of the third meeting
5-7 October 1996. Sárvár, Hungary
1997. 77 pages. 21x29.7 Softcover. ISBN 92-9043-325-6
J. Turok, F. Lefèvre, S. de Vries and B. Tóth (compilers)

***Picea abies* Network**

Report of the second meeting
5-7 September 1996. Hyytiälä, Finland
1997. 67 pages. 21x29.7 Softcover. ISBN 92-9043-330-2
J. Turok, V. Koski (compilers)

Technical Guidelines for genetic conservation of Norway spruce

(*Picea abies* (L.) Karst.)
1997. 42 pages. 17x24 Softcover. ISBN 92-9043-331-0
V. Koski, T. Skrøppa, L. Paule, H. Wolf and J. Turok

***Quercus suber* Network**

Report of the third and fourth meetings
9-12 June 1996, Sassari, Sardinia, Italy
20-22 February 1997, Almoraima, Spain
1997. 85 pages. 21x29.7 Softcover. ISBN 92-9043-336-1
J. Turok, M.C. Varela and C. Hansen (compilers)

Noble Hardwoods Network

Report of the second meeting

22-25 March 1997. Lourizán, Spain

1998. 104 pages. 21x29.7 Softcover. ISBN 92-9043-363-9

J. Turok, E. Collin, B. Demesure, G. Eriksson, J. Kleinschmit, M. Rusanen and R. Stephan (compilers)

***Populus nigra* Network**

Report of the fourth meeting

3-5 October 1997, Geraardsbergen, Belgium

1998. 85 pages. 21x29.7 Softcover. ISBN 92-9043-375-2

J. Turok, F. Lefèvre, S. de Vries, N. Alba, B. Heinze and J. Van Slycken (compilers)

First EUFORGEN Meeting on Social Broadleaves

23-25 October 1997. Bordeaux, France

1998. 176 pages. 21x29.7 Softcover. ISBN 92-9043-377-9

J. Turok, A. Kremer and S. de Vries (compilers)

Conservation of Forest Genetic Resources in Europe

Proceedings of the European Forest Genetic Resources Workshop

21 November 1995. Sopron, Hungary

1998. 57 pages. 21x29.7 Softcover. ISBN 92-9043-387-6

J. Turok, C. Palmberg-Lerche, T. Skråppa and A.S. Ouédraogo (compilers)

Noble Hardwoods Network

Report of the third meeting

13-16 June 1998. Sagadi, Estonia

1999. 116 pages. 30x21.5. Softcover. ISBN 92-9043-403-1

J. Turok, J. Jensen, Ch. Palmberg-Lerche, M. Rusanen,

K. Russel, S. de Vries and E. Lipman (compilers)

Sustainable forest genetic resources programmes in the Newly Independent States of the former USSR

Proceedings of a workshop

23-26 September 1996. Belovezha, Belarus

1999. 108 pages. 30x21.5 Softcover. Russian/English edition ISBN 92-9043-362-0

G.G. Goncharenko, J. Turok, T. Gass and L. Paule (editors)

***Populus nigra* Network**

Report of the fifth meeting

5-8 May 1999. Kyiv, Ukraine

1999. 88 pages. 21x29.7 Softcover. ISBN 92-9043-431-7

J. Turok, F. Lefèvre, S. de Vries, B. Heinze, R. Volosyanchuck and E. Lipman (compilers)

UNDERUTILIZED MEDITERRANEAN SPECIES (UMS)

The Underutilized Mediterranean Species (UMS) Project is an initiative supported by the Italian Government which seeks to improve the conservation and sustainable use of the valuable but neglected plant genetic resources present in the Mediterranean region. The project's objective is to promote the conservation of the genetic resources of underutilized species, both *ex situ* and *in situ*, to encourage the safeguarding of information relative to the conserved germplasm and to foster collaboration among institutions and organizations within the Mediterranean region.

The Project operates primarily through networking efforts spread throughout the region. Networks have already been established for rocket, hulled wheats, oregano and *Pistacia*. Members of the UMS Networks carry out an agreed workplan with their own resources while IPGRI coordinates the networks and provides financial support for the organization of technical meetings. IPGRI also contributes to raising public awareness on the importance of better conservation and use of underutilized species.

Report of the IPGRI Workshop on Conservation and Use of Underutilized Mediterranean Species

28-30 March 1994. Bari, Italy

1995. 72 pages. 21x29.7 Softcover. ISBN 92-9043-248-9

S. Padulosi, H. Ager and E. Frison (compilers)

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Rocket Genetic Resources Network

13-15 November 1994. Lisbon, Portugal

1995. 70 pages. 21x29.7 Softcover. ISBN 92-9043-255-1

S. Padulosi (compiler)

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Taxonomy, distribution, conservation and uses of *Pistacia* genetic resources

29-30 June 1995. Palermo, Italy

1996. 69 pages. 21x29.7 Softcover. ISBN 92-9043-277-2

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Promoting the conservation and use of underutilized and neglected crops. 4.

Hulled wheats

Proceedings of the First International Workshop on Hulled Wheats

21-22 July 1995

Castelvecchio Pascoli, Tuscany, Italy

S. Padulosi, K. Hammer and J. Heller (editors)

1996. 262 pages. 21x29 Softcover. ISBN 92-9043-288-8

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Promoting the conservation and use of underutilized and neglected crops. 14.

Oregano

S. Padulosi

1997. 176 pages. 21x29 Softcover. ISBN 92-9043-317-5

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Descriptors for Pistachio

(*Pistacia vera* L.)

1997. 51 pages. 17x24 Softcover. ISBN 92-9043-332-9

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Also available in French: Descripteurs du Pistachier

Descriptors for *Pistacia* spp.

(excluding *Pistacia vera* L.)

1998. 48 pages. 17x24 Softcover. ISBN 92-9043-374-4

Rocket: a Mediterranean crop for the world

Report of a workshop

13-14 December 1996. Legnaro (Padova), Italy

1997. 97 pages. 21x29.7 Softcover. ISBN 92-9043-337-X

S. Padulosi and D. Pignone, editors

Also available in portable document format from IPGRI's Web site, at: <http://www.cgiar.org/ipgri/doc/download.htm>

Rocket (*Eruca* spp.)

1999. 56 pages. 17x24 Softcover. ISBN 92-9043-421-X

Priority-setting for underutilized and neglected plant species of the Mediterranean region

Report of the IPGRI Conference 9-11 February 1998. ICARDA, Aleppo, Syria

1999. 160 pages. 21x29.7 Softcover. ISBN 92-9043-415-5

S. Padulosi, editor

INIBAP PUBLICATIONS

Please send requests to INIBAP, address on back cover.

INIBAP. 1999. **Annual Report 1998**

INIBAP. 1999. K. Sheperd. **Cytogenetics of the genus *Musa***

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Musa Disease Fact Sheet

- No. 1 - Banana streak disease
- No. 2 - Black leaf streak/black Sigatoka disease
- No. 3 - Banana blood disease
- No. 4 - Banana bunchy top disease
- No. 5 - Fusarium wilt of Banana
- No. 6 - Bugtok Disease of Banana
- No. 7 - Banana Bract Mosaic Disease
- No. 8 - Sigatoka Leaf Spot Diseases (Black and Yellow Sigatoka)

Musa Pest Fact Sheet

- No. 1 - The Burrowing Nematode of Bananas *Radopholus similis*
- No. 2 - The root Lesion Nematodes of Banana *Pratylenchus coffeae*, *Pratylenchus goodeyi*

CGIAR PUBLICATIONS

The Consultative Group on International Agricultural Research (CGIAR) is an informal association of 40 public and private sector donors that support a network of 16 international agricultural research centres. The group was established in 1971 with the mission: "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."

Annual Report 1993/94

Annual Report 1995/96

CGIAR Policy on Plant Genetic Resources/La Politique du CGIAR dans le Domaine des Ressources Phyto-genetiques/Politica del CGIAR en Materia de Recursos Fitogeneticos

Produced by IBPGR for the CGIAR in 1989. ISBN 92-9043-134-2

An Act of Faith - Research Helps Feed the Hungry

1989. 40 pages. 21.5x25 Softcover. ISBN 0-949511-94-3

In collaboration with the Australian Centre for International Agricultural Research and the Australian International Development Assistance Bureau.

Available from ACIAR, G.P.O. Box 1571, Canberra A.C.T. 2601, Australia

Partners in Conservation

1992. 30 pages. 25.4x20 Softcover

This booklet, published by IBPGR for the CGIAR, describes the activities of the 13 CGIAR Centers directly involved in plant genetic resources work.

Keeping Faith With the Future

Forests and Their Genetic Resources

1994. 13 pages. 19.8x25.2 Softcover. Published by IPGRI for the CGIAR

The CGIAR believes that forestry and agroforestry can make substantial contributions to social and economic development by helping to alleviate poverty and unemployment, to sustain agriculture and industry and to support rural and national economies. Meeting these goals will require increased research and new programmes to conserve, manage and use forest genetic resources. The CGIAR supports these activities by strengthening national capabilities, particularly in developing countries. However, the conservation and sustainable use of forest genetic resources is not the responsibility of a few nations or institutions, but must be the focus of a world-wide, cooperative effort. The CGIAR offers its scientific and technical expertise and a collaborative, multidisciplinary approach to the task of developing a long-term, global programme to manage the world's forest genetic resources.

Garder Foi en l'Avenir: Les Forets et leurs Ressources Genetiques

1994. 13 pages. 19.8x25.2 Softcover.

This is the French version of Keeping Faith with the Future, Forests and their Genetic Resources.

Fe en el Futuro: El Bosque y sus Recursos Geneticos

1994. 13 pages. 19.8x25.2 Softcover.

This is the Spanish version of Keeping Faith with the Future, Forests and their Genetic Resources.

People and Plants: The Development Agenda

1993. 12 pages. 19.5x25.5 Softcover

This pamphlet, published by IBPGR for the CGIAR, describes the plant genetic resources activities of the CGIAR within the context of Agenda 21, the Agenda adopted by the United Nations Conference on Environment and Development (UNCED) in June 1992.

Umanita' e Piante: L'Agenda dello Sviluppo

1993. 12 pages. 19.5x25.5 Softcover

This is the Italian version of People and Plants: The Development Agenda.

Les Hommes et les Plantes: Programme pour le Developpement

1994. 12 pages. 19.5x25.5 Softcover

This is the French version of People and Plants: The Development Agenda.

El Hombre y las Plantas: La Agenda para el Desarrollo

1994. 12 pages. 19.5x25.5 Softcover

This is the Spanish version of People and Plants: The Development Agenda.

Issues in Agriculture, No. 1 - Saving Lives Through Agricultural Research

by Donald L. Plucknett

The CGIAR at Twenty: Relevance Reaffirmed

the Sir John Crawford Memorial Lecture

Agricultural Development in Latin America and the Role of Research and Technological Change: An Overview

by Enrique V. Iglesias

Challenging Hunger

The Role of the CGIAR

Produced by ICRISAT for the CGIAR in 1994. ISBN 92-9066-283-2

CGIAR Fact Sheets

10-page publication produced to contribute to the debate on biodiversity for UNCED (the United Nations Conference on Environment and Development), Brazil 1992.

Partners in Selection:**Bean Breeders and Women Bean Experts in Rwanda**

1995. 24 pages. 21x28 Softcover.

CGIAR Gender Program

The Forgotten Farmer**Plant Genetic Resources, Women and the CGIAR**

1995. 16 pages. 19.2x25 Softcover. ISBN 92-9043-262-4.

For years women were "invisible" partners in the agricultural process because it was widely assumed by agricultural and development researchers that all farmers were men. However, statistics show that women's contribution to agricultural labour is significant, ranging from 40% in Latin America to 60-80% in Asia and Africa. Much of the food cultivated for household use in poor countries is grown by women as unpaid family workers, farm managers or agricultural wage labourers. In sub-Saharan Africa, for example, women dominate the smallholder sector and produce, on average, 70% of the food in the region. **(Also available in Arabic and Chinese)**

Les Agricultrices: Une Catégorie Oubliée

1995. 16 pages. 19.2x25 Softcover.

This is the French version of The Forgotten Farmer. Plant Genetic Resources, Women and the CGIAR.

El agricultor Olvidado

1995. 16 pages. 19.2x25 Softcover.

This is the Spanish version of the Forgotten Farmer. Plant Genetic Resources, Women and the CGIAR.

Agriculture and Food Needs to 2025: Why We Should Be Concerned

By Alex F. McCalla

Global Governance and New Dimensions of Human Security

By Sir Shridath Ramphal

Milestones of Renewal: A Journey of Hope and Accomplishment

CGIAR Policy Statements by Ismail Serageldin

The CGIAR at Twenty-Five: Looking Back and Looking Forward

By Maurice F. Strong

Issues in Agriculture, No. 9 - Agricultural Research and Development: The Need for Public-Private Sector Partnerships

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Ethics and Equity in conservation and use of genetics resources for sustainable food security

Proceedings of a workshop to develop guidelines for the CGIAR

21-25 April 1997, Foz do Iguacu, Brazil

Published for the CGIAR by IPGRI

1997. 197 pages. 21x29.5 Softcover. ISBN 92-9043-338-9

Recent Accomplishments of the CGIAR International Agricultural Research Centers

1998. 32 pages. 16x23.5 Softcover.

CGIAR CENTRES PARTICIPATING IN THE SYSTEM-WIDE GENETIC RESOURCES PROGRAMME (SGRP)

The CGIAR Systems-wide Genetic Resources Programme (SGRP) was established in 1994 to encompass all genetic resources activities within the Centres of the CGIAR. Fifteen Centres participate in the programme: CIAT, CIFOR, CIMMYT, CIP, ICARDA, ICLARM, ICRAF, ICRISAT, IFPRI, IITA, ILRI, IPGRI, IRRI, ISNAR, WARDA. IPGRI is the Convening Centre and the Inter-Centre Working Group on Genetic Resources (ICWG-GR) is the steering committee. In addition to the independently managed genetic resources programmes and activities of the participating Centres, the Programme includes components for coordination and collaborative activities for which the CGIAR allocates additional funds. The SGRP mission states: "Through coordination among Centres of the CGIAR and collaboration with partner organizations, the SGRP contributes to the global effort to conserve agricultural, forestry and aquatic genetic resources and promotes their use in ways that are consistent with the Convention on Biological Diversity. The SGRP seeks to advance research on policies, strategies and technologies for genetic resources, and to provide information, advice and training to its partners."

Annual Report 1995

1996. 34 pages. 19x26 Softcover. ISBN 92-9043-281-0

Report of the Internally Commissioned**External Review of the CGIAR Genebank Operations**

1996. 105 pages. 21x29.5 Softcover. ISBN 92-9043-283-7

Report of the Internally Commissioned**External Review of the CGIAR Genebank Operations**

Annex: Centres' Responses to the External Review

1997. 50 pages. 21x29.5 Softcover. ISBN 92-9043-327-2

Annual Report 1996

1997. 54 pages. 19x26 Softcover. ISBN 92-9043-342-6

Annual Report 1997

1998. 48 pages. 19x26 Softcover. ISBN 92-9043-384-1

Annual Report 1998

1999. 35 pages. 19x26 Softcover. ISBN 92-9043-417-1

The Strategy of the CGIAR System-wide Genetic Resources Programme

1999. Brochure

It is SGRP's vision that use of the world's genetic resources will ensure that all people have adequate food, shelter and other necessities of life, now and in the future.

OTHER PUBLICATIONS

A Guide to the Species of *Aegilops* L.

by J.R. Witcombe, IBPGR Wheat Programme, August 1983

Anales del Siposio Recursos Fitogeneticos

Valdivia 1984. Universidad Austral de Chile-IBPGR 1987

Recent advances in the Conservation and Utilization of Genetic Resources Proceedings of the Global Germplasm Workshop Sponsored by INIFAP and CIMMYT with support from CTA, IBPGR. Pioneer Hi-Bred International and UNDP. CIMMYT, Mexico, 6-12 March 1988, 184 pages. 21.2x27.7 Softcover

A Report on PARC/NIAR Cereals Collecting Expedition in Pakistan (1989)

IBPGR Mission, March 1990

Report of the Expert Consultation on Svalbard International Seedbank (SIS)

FAO/IBPGR, 1991

S'appropriier la vie. La recherche, le droit et les biotechnologies

by Geoffrey Hawtin and Brian Belcher, CRDI, Ottawa, 1991

Oslo Plenary Session. Final Consensus Report: Global Initiative for the Security and Sustainable Use of Plant Genetic Resources

Keystone International Dialogue Series on Plant Genetic Resources

Third Plenary Session, 31 May - 4 June, 1991, Oslo, Norway

Crop Genetic Resources of Africa (Limited availability)

Edited by N.Q. Ng, P. Perrino, F. Attere and H. Zedan

Vol. I. 1991. 305 pages. 16.3x25 Hardcover. ISBN 978-131-062-6

Proceedings of an International Conference organized by IBPGR and UNEP, in association with IITA (International Institute of Tropical Agriculture) and CNR (Consiglio Nazionale delle Ricerche), and held in Nairobi, Kenya, 26-30 September 1988

Crop Genetic Resources of Africa (Limited availability)

Edited by N.Q. Ng, P. Perrino, F. Attere and H. Zedan

Vol. II. 1991 322 pages. 16.3x25 Hardcover. ISBN 978-131-063-4

Proceedings of an International Conference Organized by IITA and CNR in association with IBPGR and UNEP, held in Ibadan, Nigeria, 17-20 October 1988

Expansion of the CGIAR System

TAC Secretariat/FAO, June 1992

Characterization and Evaluation of Safflower Germplasm

Edited by Li Dajue, Zhou Mingde and V. Ramanatha Rao

1993. 276 pages. 19x26 Hardcover. ISBN 7-116-01398-9/R 08

Safflower is a minor but important crop in Asia; its seeds serve as a source of edible oil and its flowers as medicine. In order to raise the oil yield level, efforts in safflower breeding and related agricultural practice should be enhanced. IBPGR has collaborated with Beijing Botanical Garden in collecting, characterization, evaluation and documentation of safflower germplasm. Several IBPGR scientists contributed to these activities. The data derived from characterization and evaluation of the world safflower collection in Beijing, Inner Mongolia and Xinjiang Autonomous Regions and Yunnan Province have served as the basis for this book, making the book a valuable reference source.

The Mangoes

Their Botany, Nomenclature, Horticulture and Utilization

A.J.G.H. Kostermans & J.M. Bompard

Published for IBPGR and the Linnean Society of London

1993. 233 pages. 19x25.5 Hardcover. ISBN 0-12-421920-9

Available from the Publishers

This impressive compilation represents the results of many years of research and fieldwork and provides a complete reference to all the known mango species. Each is described with details on botany, distribution and nomenclature, before a discussion of the various aspects of cultivation and use. This book will certainly become the prime reference to the group and a valuable resource to all those with an interest in promoting the maximum benefit of tropical crops.

The Quiet Revolutionaries

D. Wigg

Published by The World Bank

1993. 47 pages. 17.5x25 Softcover. ISBN 0-8213-2531-0

A look at the Campaign by Agricultural Scientists to Fight Hunger (...and How the Much-Neglected Cassava Could Help).

Proceedings of The Asian Sweet Potato Germplasm Network Meeting

Published by International Potato Center (CIP)

1993. 161 pages. 27.5x21 Softcover. ISBN 971-91361-2-X

This publication is the proceedings of the Asian Potato Germplasm Network Meeting, held February 25-March 2, 1991 at Guangzhou, China. Sponsored by The International Potato Center (CIP), the International Board for Plant Genetic Resources (IBPGR) and the Guangdong Academy of Agricultural Sciences (GAAS).

Underutilized Grain Legumes and Pseudocereals - Their Potentials in Asia by Bhag Mal

1994. 162 pages

Published by Regional Office for Asia and the Pacific (RAPA) Food and Agriculture Organization of the United Nations, Bangkok, Thailand

Contribution from Germany in the Field of Plant Genetic Resources**Selected Bibliography**

1995. ZADI/DSE. 260 pages. 21x29 Softcover.

Wild Yams in West Africa - Morphological Characteristics

Published by ORSTOM, 209 rue La Fayette, 75480 Paris Cedex 10, France in collaboration with the International Plant Genetic Resources Institute (IPGRI).

1995. 84 pages. 21x27.9 Hardcover. ISSN 1142-2581 - ISBN 2-7099-1288-0

Bilingual. English, French in one publication.

The so-called minor plants (that is to say those of no importance to the world economy) play a fundamental role in Africa. They contribute to self-sufficiency in food supplies by providing scope for crop diversification. Yam is one of these plants and is grown traditionally in West Africa for its many virtues. The genus *Dioscorea* contains several hundred species of wild yams whose identification is not always easy because of incomplete descriptions and numerous synonyms. However, wild species have been and still are of prime importance for the development of cultivated varieties. They should therefore be identified for the purpose of conservation and judicious use. This handbook proposes identification of yams *in situ* and, in the light of their great diversity, discusses the conservation and appraisal of their genetic resources.

International Technical Conference on Plant Genetic Resources: Preparatory process for West and Central Asia and North Africa

1996. FAO/IPGRI. 120 pages. 21x29 Softcover. ISBN 92-9043-286-1

Plant Genetic Resources in Vietnam

Proceedings of the National Workshop on Strengthening of Plant Genetic Resources Programme in Vietnam

Hanoi, 28-30 March, 1995

1996. 200 pages. 18.5x26.3 Softcover.

Published by Vietnam Agricultural Science Institute (VASI) with the financial support from The International Plant Genetic Resources Institute (IPGRI)

Available from Agriculture Publishing House - D14 Phuongmai, Dongda - Hanoi, Vietnam.

A review of *Allium* section *Allium*

Brian Mathew

1996. 176 pages. 15.5x24.4 Softcover. ISBN 0-947643-93-1

Available from Royal Botanic Gardens Kew, Richmond, Surrey TW9 3AB. U.K.