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**Report of the Thirteenth Session of the
FAO PANEL OF EXPERTS ON FOREST GENE RESOURCES**

Rome, Italy

10 – 12 November 2003

**FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2004**

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ACRONYMS¹

CBD	Convention on Biological Diversity (Canada)
CGIAR	Consultative Group on International Agricultural Research (USA)
CIFOR	Centre for International Forestry Research of the CGIAR (Indonesia)
CIRAD-Forêt	Centre de Coopération Internationale en Recherche Agronomique pour le Développement (France)
CSIRO	Commonwealth Scientific and Industrial Research Organization (Australia)
DFSC	DANIDA Forest Seed Centre (Denmark)
FAO	Food and Agriculture Organization of the United Nations (Italy)
IPGRI	International Plant Genetic Resources Institute of the CGIAR (Italy)
ICRAF	International Centre for Research in Agroforestry of the CGIAR (Kenya)
IPF	Inter-Governmental Panel on Forests (USA)
IUCN	World Conservation Union (Switzerland)
IUFRO	International Union of Forestry Research Organizations (Austria)
UNCED	United Nations Conference on Environment and Development (Rio de Janeiro, Brazil 3-14 June 1992)
UNDP	United Nations Development Programme (USA)
UNEP	United Nations Environment Programme (Kenya)
UNESCO	United Nations Educational, Scientific and Cultural Organization (France)
WCMC	World Conservation Monitoring Centre (UK)
WWF	World Wide Fund for Nature (Switzerland)

¹ Location of headquarters is given in brackets.

FAO PANEL OF EXPERTS ON FOREST GENE RESOURCES

REPORT OF THE THIRTEENTH SESSION

Rome, Italy 10 November – 12 November 2003

I. INTRODUCTION

The FAO Panel of Experts on Forest Gene Resources was established in accordance with the directives of the Fourteenth Session of the FAO Conference (November 1967), which read as follows:

"244. Forest Tree Genetic Resources. The Conference requested the Director-General to take into account Recommendation N° 62 of document C67/AG/FO/1 in formulating the Programme of Work and Budget 1970-71. It recognized that, as development proceeds in the less as well as in the more advanced areas of the world, the reserves of genetic variation stored in the natural forests have been or are being displaced on an increasing scale. Moreover, efforts to explore and collect forest genetic resources were, on a world scale, inadequate and inadequately concerted.

245. The Conference requested the Director-General to establish a Panel of Experts on Forest Gene Resources to help plan and coordinate FAO's efforts to explore, utilize and conserve the gene resources of forest trees and, in particular, help prepare a detailed short-term programme and draft long-term programme for FAO's action in this field and to provide information to Member Governments."

The Director-General established the Panel in 1968. A list of current members of the Panel is shown in Appendix 1.

The Panel held Sessions as follows:

Session N°	Date	Place	Year of Report
1	October 1968	Rome, Italy	1969
2	March 1971	Macon, Georgia, USA	1972
3	May 1974	Rome, Italy	1974
4	March 1977	Canberra, Australia	1977
5	December 1981	Rome, Italy	1984
6	December 1985	Rome, Italy	1988
7	December 1989	Rome, Italy	1990
8	June 1993	Rome, Italy	1994
9	October 1995	Rome, Italy	1996
10	September 1997	Rome, Italy	1998
11	September 1999	Rome, Italy	2000
12	November 2001	Rome, Italy	2002

The Thirteenth Session of the Panel was held at FAO Headquarters, Rome, Italy from 10 November to 12 November 2003.

Members attending the Thirteenth Session of the FAO Panel of Experts on Forest Gene Resources were:

1. Panel members

Mr. S.J. Midgley	Australia
Dr. P.Y. Kageyama	Brazil
M. A. Nikiema	Burkina Faso
M. M. Zeh-Nlo	Cameroon
Mr. Y. El-Kassaby	Canada
Sr. J.A. Prado	Chile
Mr. Wang Houran	China
Sr. F. Mesén	Costa Rica
Mr. L. Graudal	Denmark
M. M. Bariteau	France
Mr. M.K. Sharma	India
Mr. B. Kigomo	Kenya
Dr. D. Baskaran K.	Malaysia
Sr. F. Patiño V.	Mexico
Dr. P.H. Ståhl	Sweden

2. Observers

Mr. A. Weber	IPGRI
Mr. J. Koskela	IPGRI
Ms. B. Vinceti	IPGRI
Mr. Marcus Robbins	Consultant
Ms. J. Loo	North American Forestry Commission & IUFRO

3. Secretariat

Mr. P. Sigaud	FAO, Forest Resources Development Service
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Mr. M. Hosny El-Lakany, Assistant Director-General, Forestry Department, Mr. El-Hadji Sène, Director, Forest Resources Division, and Mr. Peter Holmgren, Chief, Forest Resources Development Service, attended parts of the Session, further joined occasionally by colleagues from the Agriculture, Fisheries and Sustainable Development Departments. Participants expressed their appreciation of the outstanding work carried out by Ms. Christel Palmberg-Lerche, former Panel Secretary.

The Panel unanimously elected Mr. Stephen Midgley of Australia Chairman and Mr. Fernando Patiño of Mexico Vice-Chairman. The Agenda adopted is shown in [Appendix 2](#).

A list of Information Notes provided to and reviewed by the Panel is given in [Appendix 3](#). In addition, each Panel member made a brief presentation and submitted information on the region or sub-region covered by him or her. Observers also made brief statements. Such information usefully supplemented the information provided in the Information Notes on the present state of forest genetic resources in the world, programmes, priorities and desirable action.

II. PROGRESS SINCE THE 12TH SESSION OF THE PANEL (2001)

1. Brief statement by individual members on regional and subregional issues

Panel members reported on activities which had taken place in countries and regions covered by them since the last Session (2001). They noted that attention to forest genetic resources from policy-makers, forest managers and development agencies was generally low, and that many public institutions involved in this field were facing significant financial constraints. FAO's traditional partners, including CATIE, CSIRO and Danida Forest Seed Centre, have shifted focus and streamlined their respective programmes. Not all traditional users of forest genetic diversity, including national tree seed centres, have been in a position to get involved in those programmes that have drawn political attention and financial resources during the past decade, like biological diversity conservation. Involvement of the private sector is limited and focused, and in some cases the privatization of gene collections has raised long-term commitment concerns. In this context, participants emphasized the importance of regional and international networks and other instruments in fostering collaboration between institutions.

Participants noted that germplasm issues have often shifted from supply and delivery to legal considerations over access and patenting, and biosecurity (including risks of invasiveness and genetic pollution). Material transfer agreements are increasingly used, on a case by case basis. At field level, the contribution of good seed to poverty alleviation and sustainable rural development is still overlooked, and participants stressed that it should be given a higher profile. At policy level, laws and regulations governing the application of genetic modification, access and transfer of reproductive materials and intellectual property regimes have been developed. A number of countries have set up legal instruments, or taken temporary measures, to regulate the use and deployment of genetic modification products.

It was confirmed that public perception often associates genetic modification with genetic improvement and there is a risk of seeing biotechnology applications rejected as a whole in some countries. Several fundamental research projects on biotechnology were mentioned by participants, although it seems that only few commercial applications have been found so far. Significant (although globally unknown) public and private funding is provided to biotechnology projects, including in developing countries. Two Brazilian consortia are leading the sequencing of eucalypt trees. The first reported commercial plantations of genetically modified trees (poplars) were established in China in 2002.

The Secretariat pointed out that forest genetic resources were broadly under the influence of three driving sectors, namely forestry, agriculture and the environment. In turn, forests and forestry are increasingly considered from an environmental perspective. However, as noted by participants, forest genetic resources are often recognized or perceived through their traditional applications in tree breeding programmes and exotic plantations. Examples from Central Africa illustrated that natural forests management and biological diversity conservation plans would benefit from basic genetic-related data (on reproductive biology, phenology, matting patterns, seed bearing, release and dissemination, genecological zonation) that are not always available to the practitioner. More generally, many participants mentioned the need for a renewed agenda on forest genetic resources, which would better take into account biodiversity assessments, climate change impacts and desertification control. Panel members stressed that a clearer message on the very nature and potential use of forest tree genetic diversity should be delivered, through this enlarged vision.

2. FAO Regular Programme

The Panel was presented with a summary of FAO's forest genetic resources programme. During the last biennium, the programme has concentrated on: (i) contributing to long-term partnership programmes with DFSC and IPGRI (on seed germplasm, arid zone species, *in situ* and *ex situ* collections, genetic conservation guidelines); (ii) evaluating the impact, and lessons learned from, global initiatives (regional status and action plans); and (iii) exploring the new boundaries of forest tree genetic diversity and emerging issues (biosecurity, GM applications). Most activities reported are intersectoral in nature and are carried out with partners inside and outside FAO. Forest genetic resources are represented in interdepartmental working groups, namely biodiversity, biotechnology and biosecurity.

Resources persons from various FAO units briefed the Panel on other on-going global programmes. Activities carried out by the Agriculture Department include the preparation of the second edition of the *State of the world's plant genetic resources for food and agriculture*; the implementation of the International Treaty; and the preparation of the first report on the *State of the world's animal genetic resources*. The Fisheries Department maintains moderate activity in genetic resources, mainly acting as a source of information on genetic biotechnologies, species identification and genetic conservation, although no full time professional staff is assigned to this field. Programmes under the Forestry Department that most relate to forest genetic resources include the *Global Forest Resources Assessment 2005* (which will collect new data on forest composition and tree species); analyses of status and trends of forest plantations and trees outside forests; and outlook studies on wood supply and demand. Outside FAO, the programme of work on forests of the Convention on Biological Diversity, in Decision VI/22/1/4, makes specific references to national, regional and global assessments of forest genetic diversity. The Convention therefore appears to be the only legally-binding global environmental agreement with an explicit reference to and work programme on forest genetic resources.

III. DISCUSSIONS AND RECOMMENDATIONS

1. Options for future action

Participants discussed two proposals presented by Panel members.

On one hand, the Panel considered a discussion paper on the relevance and feasibility of a global assessment of forest tree genetic diversity. Participants discussed the proposal, rationale, objectives, and operational implications. They unanimously agreed that the lack of global picture on the status and trends of forest genetic diversity, and the lack of estimators of the rate of genetic diversity loss, were limiting factors in decision-making at international, national and institutional levels. The discussions highlighted the need to develop, or upgrade, global datasets, strategic analysis and outlook studies for the sector. A cross-cutting, intersectoral approach was found necessary, in the light of the range of driving forces influencing genetic forest resources.

The global evaluation proposal was found in line with FAO's mandate and strategic plans, and highly relevant to the work of an organization perceived as a honest broker of high-standard, neutral and balanced information. Panel members stressed the need for innovative partnerships to take advantage of other on-going global assessment processes. It was agreed that a global forest genetic evaluation should constitute a long-term objective and rolling process, rather than a short-term set of disconnected activities. The strategic objective should be combined with a pragmatic, step-by-step implementation, using top-down and bottom-up approaches as appropriate, combined with specialized thematic case studies.

It was pointed out that the present FAO work programme on forest genetic resources already contains several elements of the proposed global assessment. Several new activities would be linked to, or carried out in collaboration with, other units within and outside the Organization. The conceptual framework would provide the necessary visibility of the FAO forest genetic resources programme and ensure overall consistency of operations. Panel members identified a number of technical issues that should be solved beforehand, including the identification and validation of measurable forest genetic parameters, the identification of values attached to the use of trees and agreements on priority-setting methodologies. They suggested to further exploring these issues through a number of thematic case studies. Several members emphasized the need for FAO to define a strategy on forest genetic resources and identify the comparative advantages of the Organization. A corporate strategic planning has just been completed at CSIRO, and its main elements could be used, at least as broad building blocks, at FAO.

On the other hand, Panel members considered, and agree on the conclusions of, a discussion paper on the relevance and feasibility of a global evaluation of biotechnology in the forestry sector. Forest trees are often associated with agricultural crops, although technical issues, corporate investments and economic returns appear to differ significantly in the two sectors. Some participants pointed out that decisions on biotechnologies was not always based on the best information available, and that a global picture on the status and trends of forest biotechnologies would help decision-makers, scientists and the general public at international, national and institutional levels.

The Secretariat explained that a biotechnology evaluation, to be carried out in less than two years, would have financial implications, and would be undertaken only if extra budgetary funding, including from the FAO interdepartmental working group on biotechnology, were available. The work is expected to generate statistical information and analyses necessary to the preparation of the forestry component of an FAO-wide Agriculture Biotechnology Policy Compendium. The evaluation could take advantage of on-going FAO programmes, through a logical chain of studies (wood supply and demand outlook -> projections on plantations -> outlook study on tree germplasm -> trends in tree breeding and improvement programmes -> impact on research and training).

2. The role and the functioning of the Panel

The Secretariat distributed a questionnaire on the perceived outcomes of the previous Session, the Panel's contribution to the work of individual members in their respective countries and institutions, and ways to improve its functioning and increase its leverage. A majority of participants reported using and disseminating the outputs of the 2001 Session in public relation rather than fund raising. They agreed that specialized presentations from other FAO units helped them to put FAO's forest genetic resources programme in context and stimulated discussions. Several members proposed to prepare and present discussion papers, for example during thematic Sessions, for which several themes were suggested. The need to convene Panel meetings more open to multidisciplinary contributions was stressed. Some participants emphasized that the Panel has in the past been instrumental in international tree seed exchanges, which laid the basis of modern plantation forestry, and that such outcomes should be recorded and celebrated.

A short discussion on the role of the Panel regarding the proposed technical assessments was held. The group did not find it relevant to establish sub-groups. Instead, Mr. Michel Bariteau (with the kind assistance of Mr. Paulo Kageyama) and Mr. Yousry El-Kassaby agreed to act as focal points and assist the Secretariat with the global evaluation and the biotechnology assessment respectively. Once finalized, draft documents would be circulated to all Panel members and resource persons for their remarks and inputs. The work of the Panel, and its contribution to the work of FAO, could be disseminated through several mechanisms, including the FAO News & Highlights releases.²

The global forest genetic resources assessment proposal should be further defined and fine-tuned. A tentative road map, prepared by some Panel members during the meeting, suggested to prepare a concept note to be circulated for comments, a number of country-based, species-based or thematic case studies in 2004-2005, and relevant syntheses, as appropriate. It was recommended to closely associate partner institutions and regional forestry commissions and their working groups to the process. The biotechnology assessment would constitute a specific case study.

3. Recommendations

1. The Panel stressed the importance of raising awareness of the social, economic and environmental benefits of conservation and wise use of forest genetic resources, and of the direct and indirect contributions which such action make to national and rural development. It recommended that FAO use relevant frameworks and information dissemination means to continue to provide up-to-date information on forest tree genetic diversity. The Panel recommended that FAO continue to give balanced attention to activities in the various geographical and eco-regional zones, and among forest genetic resources activities.
2. Recognizing limitations in national and international decision-making due to the lack of global information mechanisms on the state of forest genetic resources, the Panel recommended that FAO continue its efforts to explore ways to systematically collate, analyze and synthesize national, regional and global data and information on forest trees and genetic resources.
3. The Panel recommended that FAO clarify a number of technical issues in relation to a global assessment on forest genetic diversity, including the identification and validation of measurable forest genetic parameters, the identification of values attached to the use of trees and the relevance

² <http://www.fao.org/news/2002/020202-e.htm>

of existing priority-setting methodologies. The Panel recommended that appropriate studies on the relevance, feasibility and process of a global assessment of forest genetic resources be continued, and that procedures and partnerships for the assessment be established.

4. The Panel highlighted the role of FAO in raising awareness of the potentials and limitations of biotechnology in the forestry sector, and recommended that FAO continue to provide timely, up-to-date, technically sound information to countries and international organizations on issues related to the use of such technologies. The Panel recommended that FAO further explore the feasibility of a forest biotechnology evaluation, pending the identification of appropriate extra-budgetary funds; and that drafts documents be circulated to all Panel members and resource persons.
5. The Panel noted FAO's efforts to enhance the efficiency of the Organization, including its Statutory bodies, in a time of financial challenge. It recognized the importance of flexible task-oriented working arrangements within the Panel, and recommended that FAO continue to promote thematic Panel Sessions, supported by relevant discussion papers.

APPENDIX 1
MEMBERSHIP OF THE PANEL OF EXPERTS ON FOREST GENE RESOURCES
Period 1 July 2001 - 30 June 2004

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APPENDIX 2
AGENDA OF THE FAO PANEL OF EXPERTS ON FOREST GENE RESOURCES
Thirteenth Session
Rome, Italy 10 - 12 November 2003, Ethiopia Room (C285)

1. Opening of the Meeting
2. Election of Chairman and Vice-Chairman
3. Adoption of the Agenda
4. Progress since the 12th Session of the Panel (November 2001):
 - (i) Brief statement by individual members (regional/sub-regional issues)
 - (ii) FAO Regular Programme
5. Discussion of Priorities for Future Action:
 - (i) State of the World's Forest Tree Genetic Resources
 - (ii) State of Biotechnology in Forestry
 - (iii) Proposals for FAO Programme Activities
6. Discussion on the Role and Functioning of the Panel
7. Miscellaneous and Other Business
8. Closing of the Meeting

APPENDIX 3
LIST OF INFORMATION NOTES

{PRIVATE }AGENDA ITEM	INFORMATION NOTE N°	TITLE	LANGUAGES	APPENDIX No.
1	FORGEN/03/Inf.1	List of Information Notes	E,F,S	Appendix 3
2				
3	FORGEN/03/1A	Tentative Agenda	E,F,S	Appendix 2
	FORGEN/03/1B	Provisional Timetable	E,F,S	
	FORGEN/03/2A	List of Panel Members	E,F,S	Appendix 1
	FORGEN/03/2B	List of Participants	E,F,S	
4	FORGEN/03/3	Follow-up to Recommendations of the Twelfth Session of the Panel	E,F,S	Appendix 4
	FORGEN/03/4	FAO Regular Programme Activities in Forest Genetic Resources 2002-2003	E,F,S	Appendix 5
	FORGEN/03/5	State of Forest Tree Genetic Resources in the World : Feasibility Study & Work Options	E,F,S	Separate Working Paper
	FORGEN/03/6	Feasibility and Proposed Outline of a Global Review of Forest Biotechnology	E,(F),(S)	Separate Working Paper
	FORGEN/03/7	Progress in the Preparation of Country and Regional Assessments on Forest Genetic Resources, and Regional Action Plans	E,(F),(S)	Appendix 6

APPENDIX 4
FOLLOW-UP TO RECOMMENDATIONS OF THE 12TH SESSION OF THE PANEL

This Appendix (based on Information Note FORGEN/03/3) summarizes the main recommendations addressed to FAO by the Twelfth Session of the Panel of Experts on Forest Gene Resources in November 2001 and action taken in response to these recommendations (2001-2003).

I. Introduction

At its 12th Session held in Rome, Italy, 21-23 November 2001, the Panel of Experts on Forest Gene Resources passed a total of 12 recommendations. These recommendations, as published in the Report on the meeting, are listed below, accompanied by brief notes on action taken by FAO in response to each of them since the last Session.

The present Appendix should be read in conjunction with Appendices 5 and 6.

II. Follow-up to Recommendations

Recommendations at Policy Level

1. The Panel stressed the importance of fostering collaboration and forging partnerships with national and international agencies, institutes and mechanisms in the forest genetic resources field, and to promote cross-sectoral linkages and encourage donor coordination. It reconfirmed its support to the main thrust and focus of programmed activities in the planned FAO work programme for the coming biennium and the Medium Term Plan. It recommended that balanced attention continue to be given to activities in the various geographical and eco-regional zones, and among forest genetic resources activities.

FAO has continued to play an active role in fostering collaboration between international, regional and national institutions, and in promoting appropriate attention to forest genetic resources issues. Activities have taken place in all the main geographic regions.

2. Noting the increasing attention that issues in forest biological diversity were receiving world-wide, the Panel recommended that FAO continue to make full use of already existing action frameworks in the implementation of forest genetic resources activities, such as national forest programmes and programmes underpinning sustainable forest management. It stressed the need to incorporate genetic principles in activities aimed at the conservation of biological diversity, and as an integral component of natural forest management.

Efforts have been made to identify sustainable forest management initiatives, at policy level and field level, and options has been considered on the way to incorporate forest genetic resources considerations into biological diversity conservation efforts. These issues have been addressed at two regional workshops, respectively in Central America (2002) and Central Africa (2003). They will be discussed at the Thirteenth Session of the Panel.

3. In order to allow activities to continue in line with recommendations by concerned Statutory and Governing Bodies of the Organization, which reflected expectations of Member Countries and the international community, the Panel recommended that efforts be made to sustain present levels of resources allocated to FAO's forest genetic resources

programme.

Budget allotments from the Regular Programme were available in 2002-2003 with the same order as in the previous biennium. An increasing proportion of forest genetic resources funding originates from extra-budgetary sources (in particular, the FAO-Netherlands Partnership Programme on Agro-Biodiversity).

Recommendations on Overall Focus

4. The Panel highlighted the role of FAO in raising awareness of the potentials, and the place and role, of forest biotechnologies in genetic studies and in selection and breeding programmes, and the role of the Organization in providing ethical direction and guidance in the managed use of new technologies. The Panel recommended that FAO continue to provide timely, up-to-date, technically sound information to countries and international organizations on issues related to the use of such technologies, and that it continue to serve as “honest broker of quality science-based information on biotechnologies”³.

Special attention has been given to the developments of biotechnologies and their role in forest genetic diversity management. Inputs were provided to the State of the World’s Food and Agriculture (SOFA); to synthesis papers and project proposals within the Interdepartmental Working Group on Biotechnology; and the State of the World’s Forests. A global review of the state of genetic modification in forestry has been commissioned. Proposals for a global review of biotechnology in forestry will be discussed at the Thirteenth Session of the Panel.

5. The Panel noted the increased need to promote application of conventional and new genetic technologies which had proven useful in industrial forestry also in the management of trees grown outside the forest, in agroforestry systems and land rehabilitation programmes, desertification control and for the capture of atmospheric carbon.

*FAO continues to provide technical support to national institutions in member countries, towards the conservation, management and use of forest genetic diversity, through the use of traditional breeding programmes and new biotechnology tools. Focus is given to information gathering, analysis and dissemination, through a variety of communication tools, publications, workshops, meetings and other mechanisms. In collaboration with INRA, France, a review of existing species and provenance trials established in countries of the Near East within the framework of *Silva Mediterranea* will be carried out in the next biennium.*

6. The Panel stressed the need to continue to raise awareness of the social, economic and environmental benefits of conservation and wise use of forest genetic resources, and of the direct and indirect contributions which such action made to national and rural development. It stressed the need to further emphasise the compatibility of genetic conservation and genetic management with the managed use of forest resources to meet present-day as well as future needs.

*“Forest Conservation, Biodiversity and Wildlife” is a programme element being implemented by the Forest Resources Conservation Service to promote the management of wildlife and protected areas. In the recent past, the programme was focused on the sustainable use of wildlife for food and income generation. Synoptic publications on wildlife and food security in Latin American and Africa were produced, as were specific publications on game husbandry techniques for the Paca (*Agouti paca*), the Grasscutter (*Thryonomys swinmderianus*), and other small mammals.*

³ 116th Session of the FAO Council. Document CL 116/Rep. June 1999, para 25.

Current focal areas include management effectiveness in protected areas, effectiveness of biodiversity conservation, reconciling protected area management with sustainable rural development, and sustainable use of forest animal biodiversity. The programme also assists member countries to fulfill the requirements of international conventions.

7. The Panel welcomed the continued attention given by FAO to the genetic management of species providing a range of wood and non-wood products and environmental services, and the attention paid to the health and vitality of the ecosystems of which they formed part. The Panel noted that action taken in regard to *Prunus africana* could provide useful guidance on risk assessment and conservation strategies and methodologies.

FAO has continued to collect, analyze and evaluate information on important forest species, including those species with other uses than wood, pulp and timber, with special attention to species growing in dry and moist tropical zones. The data collection work, carried out by national partners, has generally been undertaken during the preparation of regional workshops, in close collaboration with international organizations, including ICRAF, IPGRI, IUFRO, CIFOR and the Danida Forest Seed Centre.

8. The Panel recommended that FAO continue to support countries and national institutions in the preparation of regional and eco-regional forest genetic resources status and action plans, based on priorities and needs of individual countries, and endorsed for action under a regional umbrella in related workshops. The final aim was to develop, step by step, a country-driven, participatory, global assessment and action framework for the conservation and sustainable use of forest genetic resources.

Two workshops have been organized, and previous workshops followed up. See Information Note FORGEN/03/7 for details.

9. The Panel recommended that activities related to the dissemination of information and exchange of germplasm for evaluation and conservation purposes, be continued. Noting new developments in legal aspects related to collection, transfer, exchange and trade in reproductive materials, the Panel re-confirmed its view that such exchange should be based on mutually agreed terms and agreements. FAO was encouraged to further gather and disseminate relevant information on international and regional seed certification systems, access and benefit-sharing, material transfer agreements (MTAs) and biosafety aspects in germplasm exchange, including issues related to potentially invasive species and threats to forest genetic resources posed by pests and diseases.

FAO has continued to provide assistance to member countries in the field of seed collection, production, handling and exchange, including aspects of tree breeding and selection, property rights issues and access and benefit-sharing. An internet site is hosting an overview of forest reproductive materials issues, where examples of MTAs are provided. In 2002, ICRAF published a new version of the Forest Seed Supplier Directory, updated in collaboration with IUFRO and FAO. A special programme has been launched to review issues related to biosecurity aspects in forestry, including regional and global studies of the phenomenon of invasive forest tree species. A Technical Collaboration Project in North China aims at short-term and long-term aspects of pest management in large scale man-made forests, with emphasis on the Asian long-horn beetle Anaplophora glabripennis.

10. The Panel recommended that FAO continue to catalyze and support the development of practical, technical guidelines for the management of forest genetic resources. The Panel expressed its support to the further development of methodologies and pilot activities on *in situ* and *ex situ* conservation coupled with forest management and sustainable resource use. It welcomed plans for focused attention to a limited number of species-specific networks, including neem and mahogany species, and encouraged further support to institutional networking and twinning.

Work has continued towards the publication of the proceedings of the International Neem Network (INN) Workshop on Data Collection and Analysis (2001); and the dissemination of relevant information materials. All technical documents published in the framework of the INN have been digitalized, and are made available on the FAO Forestry Department internet homepage. In situ genetic conservation methodologies have been developed and published, in collaboration with IPGRI and DFSC.

11. The Panel recommended that special attention be paid to forest tree species threatened by genetic erosion caused by unsustainable use, and by factors such as fire, drought and other adverse environmental factors, which were often aggravated by insufficient biological and genetic knowledge of the species concerned and the ecosystems in which they occurred. Due attention should be paid to genetic resources in areas with low forest cover countries.

FAO actively contributes to the preparation of methodologies for the conservation of forest tree genetic diversity, through relevant publications and inputs to technical guidelines on in situ and ex situ conservation by the Danida Forest Seed Centre.

Recommendations related to targeted actions and Areas of Activity

The Panel passed a number of specific technical recommendations complementing the recommendations above, stressing the need for continued and increased attention to information management, definitions and evaluation, including:

12. Well-targeted information dissemination, ensuring stratification of information materials according to targeted users; and information management, using traditional and new methods. Special mention was made of the annual bulletin, "Forest Genetic Resources", and the Forest Genetic Resources Homepage, both available in three languages, which were considered particularly useful vehicles for information dissemination and exchange.

Provision of up-to-date information on the state of the world's forest genetic resources, notably through continued development and regular up-dating of information lodged in the FAO World-Wide Information System on Forest Genetic Resources (REFORGEN).

The harmonization of concepts and terms, with special reference to on-going collaboration with IUFRO in the development of reference glossaries on terms frequently used in the forest genetic resources field.

Raising of awareness of the social, economic and environmental benefits of conservation and wise use of forest genetic resources, and of the direct and indirect contributions which such action made to national and rural development.

Issues No 29 and 30 of the annual bulletin “Forest Genetic Resources” were published in English, French and Spanish in 2002 and 2003 respectively. The extensive internet page on forest genetic resources is periodically updated and available in three languages.

Working documents, case studies and national status reports are being published in the Forest Genetic Working Papers series; and the Forest Health and Biosecurity Working Papers series. Development of the REFORGEN information system has been slower than initialled planned, although new data from national status reports are being entered time after time. The new infrastructure will offer a platform common to other species-based applications of the FAO Forestry Department. The FAO-IUFRO Glossary on Forest Genetic Resources terminology has been updated, printed (English version) and is available on line. A holistic approach to a global status of forest genetic diversity will be discussed at the Thirteenth Session of the Panel.

APPENDIX 5
FAO REGULAR PROGRAMME ACTIVITIES IN FOREST GENETIC RESOURCES 2002-2003¹

FAO provides technical support to member countries' national institutions in the conservation, management and sustainable use of forest genetic resources. In line with FAO Strategic Plan for Forestry, and in close coordination with international partners, the focus is on the transfer of information and technologies, through a wide range of communication tools, publications, networking and twinning mechanisms. The main activities carried out in the 2002/2003 biennium are summarized below.

1. *Exchange, evaluation and assessment of genetic resources*, in collaboration with national institutes and international organizations, such as the International Union of Forestry Research Organizations (IUFRO), relevant Centres of the Consultative Group on International Agricultural Research (Future Harvest Centres), and the Danida Forest Seed Centre, Denmark, aim at exploring, conserving and better utilizing forest tree genetic diversity, focusing on socio-economically important species for the dry and humid tropics. Recent activities have concentrated mainly on arid zones species, including *Acacia*, neem and *Prosopis*. FAO and DFSC have continued to assist national institutions in the evaluation of arid zone trials of *Acacia* and *Prosopis*. The main results of the introduction programme are now available on line. Within the framework of *Silva Mediterranea*, FAO and the French National Institute on Agronomic Research (INRA) collaborate with countries in the Near East to review earlier introductions of Mediterranean conifer species.

2. *Biosecurity in Forestry*: short-term and long-term effects of forest tree germplasm introduction are increasingly considered through a biosecurity perspective. A number of global reviews and regional case studies have been commissioned to assess the phenomenon of "invasiveness" by introduced forest trees. Special attention is being given to *Prosopis* species in the Sahel and the Near East, through FAO intersectoral working groups. In partnership with IPGRI, technical guidelines for the safe movement of *Pinus* and *Acacia* germplasm have been published and digitalized. Biosecurity aspects also include a review of genetic modification developments and applications in the forestry sector.

3. *Seed and Forest Reproductive Material*: an overview of forest reproductive material has been produced, highlighting traditional issues and pointing the development of new challenges and issues. Legal implications of property rights and the preparation of material transfer agreements are closely followed and reported upon. In 2003, a review of extension manuals of relevance to forest seed and germplasm collection, storage and use, was commissioned and will be finalized in collaboration with ICRAF and DFSC. The work is complemented by the digitization of main public-domain extension materials on crop trees, forest trees and trees used in agro-forestry systems. Work is on-going to provide data and statistical information on the global status and trends of forest seed supply and demand. The study will complement the work of other FAO units working on global forest assessments; global wood supply and demand outlook studies; and status and trends of planted forests.

4. *Conservation of genetic resources* actively contributes to elaborating forest genetic resources conservation methodologies, through the evaluation in the field of *in situ* and *ex situ* stands of native or introduced species. The Danida Forest Seed Centre provides significant technical and financial support; results and conclusions of individual species-specific programmes are being published by DFSC. The experience gained is being synthesized and summarized in a series of technical guides to forest genetic resources conservation that FAO, the International Plant Genetic Resources Institute (IPGRI) and DFSC are finalizing. The first guide, focusing on *in situ* conservation, is available in English and Spanish, and will be translated into Chinese and French. Support was also provided to an international initiative for the genetic conservation of Mexican island populations of *Pinus radiata*.

¹ Based on Information Note FORGEN/03/4

5. *Regional workshops*: as a follow-up to recommendations made by the 13th Session of the Committee on Forestry (COFO) in 1997, FAO has been supporting the preparation of status assessment on forest genetic resources at national and regional levels, and the organization of eco-regional workshops for their conservation and sustainable use. The process is aimed at assisting countries in reviewing the situation, defining priorities and needs, and identifying areas for coordinated action, focusing on a limited number of priority species and activities. In collaboration with international, regional and national organizations, workshops have been convened in Central America, Cuba and Mexico (2002) and Central Africa (2003), with the financial support of the FAO-Netherlands Partnership Programme on Agrobiodiversity. FAO also provided inputs to the Inception Workshop of the Forest Genetic Resources Programme for Asia Pacific Region, launched by IPGRI, APAFRI, and the Forest Research Institute of Malaysia. In the process of the workshops, a number of documents have been prepared, including country assessments, regional syntheses, and eco-regional action plans. This information is being evaluated, published, disseminated, translated, and posted on-line at the FAO Forestry Homepage. Data is also being used to update the species/country based REFORGEN information system.

6. Under *International collaboration*, FAO works with IUFRO, Future Harvest (CGIAR) centres (notably IPGRI, the Centre for International Forestry Research (CIFOR) and the International Centre for Research in Agroforestry (ICRAF)), the CBD Secretariat, universities, national forest services and research institutes. IUFRO's *SylvaVoc* is finalizing a glossary of terms frequently used in the forest genetic resources field, with definitions in English, French, German and Spanish; the glossary is now available on line. FAO provided inputs to, and closely followed, the background of the extended work programme on forest biological diversity by the CBD Secretariat. The programme, adopted by the sixth Conference of the Parties in The Hague in 2002, contains provisions for the preparation of national and regional status and action plans on forest genetic resources. FAO will provide a resource person to Ad-Hoc Technical Expert Group meetings to review the implementation of the work programme on forest biological diversity.

7. FAO provides focused assistance to several *field projects*, including projects with components in seed collection, production, handling and exchange; tree-improvement and breeding; ecosystem and genetic resource conservation; and the integration of genetic conservation in forest management practice and protected area management. Countries include China, Egypt, Lebanon, Morocco, Namibia and Turkey. A project in North China is considering the sustainability of poplar shelterbelts through short- and long-term approaches to the control of insect pest *Anaplophora glabripennis* (Asian long-horn beetle).

8. *Information activities* have developed further with the upgrading of REFORGEN, which is being transferred to the FAO Forestry Department information system. As far as the new system, still under development, allowed, new information originating from regional workshops, have been incorporated in data base. Country-based information, case studies are printed and posted on line in form of working papers, base data from which more focused, detailed, synthetic analyses and assessments will be carried out.

9. FAO annually publishes a news bulletin, *Forest Genetic Resources* (in 3,800 copies, in three languages). Since the last Session of the Panel, issues No 29 and 30 have been published and preparations for issue No 31 have progressed. Recent bulletins and other relevant information are now posted on the Internet at the FAO forest genetic resources home page, with an updated index, and it is planned to digitalize the entire collection in the coming months. The revised homepage contains detailed information on programmes and activities carried out in the field of forest genetic resources; and links to the work of associated programmes within and outside of FAO. The Report of the Twelfth Session of the Panel of Experts on Forest Gene Resources (2001) is available in English, French and Spanish, in printed version, and on the Internet, with the Regional Updates 2001 provided by Panel members.

APPENDIX 5, Annex I
FOREST GENETIC RESOURCES WORK PROGRAMME 2002-2003

Main Themes	Activities	Planned Output	External Partners
Information management Collection, analysis, dissemination of neutral and updated technical information	REFORGEN, global data base (species x countries); <i>Forest Genetic Resources</i> bulletin; Internet homepage on FGR; Glossary on FGR (definitions of 60 frequently used terms).	REFORGEN information updated for selected countries; REFORGEN structure upgraded; <i>Forest Genetic Resources</i> published in E, F and S; New FGR homepage released; Finalization, publication and posting on line.	University of Viterbo FAO-Netherlands Partnership Programme (Agro-Biodiversity) IUFRO <i>SylvaVoc</i>
Support to country-based assessments of FGR and preparation of regional status and action plans	Assistance to preparation of country reports; follow-up to previous regional workshops (SADC, Pacific)	Regional Workshops held in Central America (2002) and Central Africa (2003); Publications of country reports for Meso America, Southern Africa and Central Africa.	IPGRI, UNDP, ICRAF, IUFRO DFSC, CATIE SPRIG
Methodologies for conservation of forest genetic resources	Review of methodologies and practices for <i>in situ</i> and <i>ex situ</i> management	Publication of <i>in situ</i> Conservation Guide (E,F, S); & overall aspects; Synthesis of results from <i>in situ</i> & <i>ex situ</i> conservation projects.	IPGRI ICRAF DFSC
Secretariat services to FAO Statutory Bodies	Assistance to Panel of Experts on Forest Gene Resources	Preparation of 13 th Session of Panel	15 members worldwide + observers
Contribution to FAO's Inter-Departmental Work Programme	Inputs to work of Working Groups on: Biodiversity; Biosecurity; Biotechnology	Publication of review papers on biosecurity and invasive forest trees; Inputs to CBD processes on forest biological diversity; Review of Biotechnologies; Global Review of GM trees.	CBD FNPP Agro-Biodiversity CABI
Specific support to networks, programmes, member countries requests and field projects	Coordination of International Neem Network (INN); Follow-up to <i>Acacia</i> , <i>Prosopis</i> & mahogany activities; Technical assistance to member countries and projects (China, Namibia, Near East);	Publications on INN; Preparation of proceedings of Workshop on data analysis; Technical assistance updating web sites of field projects; Technical publications.	DFSC GCP/CPR/009/BEL TCP/CPR/2903 EP/INT/204/GEF

APPENDIX 5, Annex II
LISTS OF SOME TECHNICAL MEETINGS, TRAINING COURSES AND WORKSHOPS
WHICH INCLUDE ELEMENTS ON THE CONSERVATION AND USE OF FOREST
GENETIC RESOURCES ORGANIZED OR SUPPORTED IN 2002-2003

2002:

1. *Regional Conference on the Prevention and Management of Invasive Alien Species: Forging Cooperation throughout Southern Africa.* FAO Presentation on “A Case Study on the Status of Invasive Tree Species in Southern Africa”. UICN/GISP, Lusaka, Zambia, 10-12 June 2002.
2. *National Conference on Sustainable Forestry in North China.* International Forestry Cooperation Center of the State Forestry Administration and FAO project GCP/CPR/009/BEL, Tongliao, Inner Mongolia, 22-25 August 2002.
3. *“Good Seeds for Better Forests” - Sub-regional Training Course on Forest Reproductive Material -* IPGRI/ Arab Forest and Range Institute (AFRI) in technical collaboration with FAO, Latakia, Syria, 14-25 September 2002.
4. *Biodiversity and the Ecosystem Approach in Agriculture, Forestry and Fisheries.* Inter-Departmental Working Group on Biological Diversity for Food and Agriculture. Satellite event on the occasion of the Ninth Regular Session of the Commission on Genetic Resources for Food and Agriculture, FAO, Rome, 12-13 October, 2002.
5. *Taller Regional Sobre Recursos Genéticos Forestales en Central America, Cuba y México.* FAO, IPGRI, DANIDA Forest Seed Centre & IUFRO. Turrialba, Costa Rica, 24-29 November 2002

2003:

1. *Workshop “Conservation, management and sustainable use of forest genetic resources with reference to Brazil and Argentina”* IPGRI/BMZ/INTA with participation of FAO. San Carlos de Bariloche, Argentina, 28 April to 2 May 2003.
2. *APFORGEN Inception Workshop.* APAFRI/IPGRI/FAO Regional Workshop on Forest Genetic Resources, Kuala Lumpur, 15-18 July 2003.
3. *Asia-Pacific Forest Invasive Species Conference.* FAO Asia-Pacific Forestry Commission. Kunming, China, 17-22 August 2003
4. *Tree improvement (B4a) Session,* World Forestry Congress, Quebec, 21-28 September 2003.
5. *Atelier régional FAO, AOB, PNUD-Cameroun, IPGRI-SAFORGEN, ICRAF & IUFRO sur les ressources génétiques forestières de l’Afrique Centrale.* Pointe Noire, Congo, 14-15 October 2003
6. *Thirteenth Session, FAO Panel of Experts on Forest Gene Resources.* Rome, Italy, 10-12 November 2003.
7. *IUFRO Task Force of Forest Genetic Resources.* FAO, Rome, 13-14 November 2003
8. *Ad Hoc Technical Expert Group on the review of the implementation of the programme of work on forest biological diversity.* CBD. Montpellier, France, 24-27 November 2003.

APPENDIX 6
PROGRESS IN THE PREPARATION OF COUNTRY AND REGIONAL ASSESSMENTS
ON FOREST GENETIC RESOURCES, AND REGIONAL PLANS OF ACTION¹

BACKGROUND

To assist countries in identifying their main issues and priorities in forest genetic resources, FAO supports the preparation of status assessment and action plans for forest genetic resources at the national and regional levels, through eco-regional workshops convened in collaboration with international, regional and national organizations. Workshops have been held for North America and Boreal Forests (1995), Sahelian Africa (1998), the South Pacific (1999), Southern and Eastern Africa (2000), Central America, Cuba and Mexico (2002) and Central Africa (2003). Documents prepared for these workshops on methodologies, country assessments and eco-regional status and action plans are printed and posted on FAO's Web site. Updated data on species and institutions are compiled in the FAO World-Wide Information System on Forest Genetic Resources (REFORGEN). This Note summarizes the outcomes of the workshops convened in 2002 and 2003. Background information was provided in Information Note FORGEN/01/6E (2001).

DEVELOPMENTS IN CENTRAL AMERICA

The Regional Workshop on Forest Tree Genetic Resources for Central America was held at CATIE, Turrialba, Costa Rica, in November 2002. The workshop gathered experts from nine countries (Belize, Costa Rica, Cuba, El Salvador, Guatemala, Honduras, Mexico, Nicaragua and Panama), CATIE, IPGRI, IUFRO, and DFSC. During the last decade, the field of forest genetic resources has changed radically in a majority of countries, at policy, institutional and technical levels. While deforestation and encroachment are still comparatively high, a majority of public-owned seed centers face financial constraints and have difficulties to integrate efforts on biodiversity conservation. Costa Rica is showing innovative approaches to seed certification, biodiversity investment schemes and access and benefit-sharing from the use of, or investigations on, genetic resources. Country status assessments have been completed and are being printed and posted on the internet. A regional synthesis and action plan will be finalized.

DEVELOPMENTS IN CENTRAL AFRICA

A regional workshop on forest and tree genetic resources for Central Africa was held in Pointe Noire, Congo, 14-15 October 2003. The workshop, organized by FAO in collaboration with the African Timber Organization, IPGRI, ICRAF and IUFRO, was attended by participants representing countries of the Congo Basin (Cameroon, Democratic Republic of the Congo, Congo, Sao Tome & Principe), international organizations and national agencies. Country-based information has in addition been received from the Central African Republic, Equatorial Guinea and Gabon. Participants have presented status reports that should be updated and finalized in collaboration with national stakeholders concerned. A regional synthesis, discussed by participants, should incorporate these updates. Three main domains of applications were identified for the action plan: seed sources; provenances and genecological zonation; and domestication of fruit trees and medicinal species. At policy level, the plan of action could be integrated into the COMIFAC revised program on forests. A number of options have been discussed to promote the incorporation of genetic resources considerations into management plans.

¹ Based on Information Note FORGEN/03/7

APPENDIX 6 Annex I

**SUMMARY OF PROCESSES AND OUTPUTS OF FAO REGIONAL WORKSHOPS
ON FOREST GENETIC RESOURCES**

	Sahelian Africa (1998)	Pacific Islands (1999)	Eastern & Southern Africa (2000)	Central America (2002)	Central Africa (2002)
Number of participants	35	60	22	30	20
Number of countries/territories represented	15	18	9	9	4
Number of organizations represented	6	10	6	20	10
List of priority species completed?	Y	Y	Y	Y	-
Regional (Synthesis) Assessment completed ?	Y	Y	Y	Y	-
Regional Action Plan completed?	Y		Y	Y	-
Number of country reports available	18	20	9	9	7
Number of country assessments printed	7	6	9	9	-
Number of country reports available on line	7	5	9	-	-

(as by November 2003)

