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Organización
de las
Naciones
Unidas
para la
Agricultura
y la
Alimentación

NORTH AMERICAN FOREST COMMISSION

TWENTY-FIFTH SESSION

Guadalajara, Jalisco, Mexico, 3 – 7 May 2010

PREPARATION OF *THE STATE OF THE WORLD'S FOOD GENETIC RESOURCES* REPORT

1. Genetic diversity provides the fundamental basis for the evolution of forest tree species and for their adaptation to change. Conserving forest genetic resources is therefore vital, as they are a unique and irreplaceable resource for the future. FAO has for many decades acknowledged their importance. As far back as 1967, the FAO Conference recognized that forest genetic diversity was increasingly being lost and requested the establishment of the Panel of Experts on Forest Gene Resources, to help plan and coordinate FAO's efforts to manage the genetic resources of forest trees.
2. FAO's activities in forest genetic resources are an integral part of the FAO Forestry Programme and contribute to other programme components, such as sustainable forest management, tree breeding and plantation development, and protected area management. For many decades, the Panel of Experts on Forest Gene Resources has guided FAO's work on forest genetic resources, reporting on progress made to the Committee on Forestry (COFO).
3. Forest genetic resources management can be effective only if treated as an integral element of overall sustainable forest management. Conservation concerns should be integrated into broader national and local development programmes, such as national forest programmes, rural development plans and poverty reduction strategies, which promote cooperation among sectors.
4. However, lack of information limits the capacity of countries and the international community to integrate forest genetic resources management into overall cross-cutting policies. It is recognized that reliable general data on forest status and trends is of great importance to the efficient management of forest genetic resources. Forest-related information, however, largely

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refers to forest resources in general rather than to forest diversity and variation. Availability of specific information on status and trends in forest genetic resources is today woefully inadequate, although some progress has been made at the national and sub-regional levels in the past decade.

5. At its Eleventh Session in June 2007, the Commission on Genetic Resources for Food and Agriculture (CGRFA) acknowledged the urgency to conserve and sustainably utilize forest genetic resources. The Commission requested that a *State of the World's Forest Genetic Resources* report be prepared and presented to the Commission in 2013. The CGRFA recommended that the Committee on Forestry and the FAO Regional Forestry Commissions be involved in the preparation of the report, in synergy with relevant regional and global programmes, including the Convention on Biological Diversity.

6. The report on the *State of the World's Forest Genetic Resources* will be prepared through a country-driven approach based on information provided by countries and thematic studies. The Global Forest Resources Assessment process (FRA) might serve as a model, and the two processes will be linked.

7. The process would build upon relevant initiatives and experience, including seven sub-regional workshops organized by FAO over the past ten years, for which 71 national reports were prepared, and the global FAO Information System on Forest Genetic Resources (REFORGEN) database based on information provided by member countries.

8. The preparation of the *State of the World's Forest Genetic Resources* was welcomed by the ninth meeting of the Conference of the Parties (COP 9) of the Convention on Biological Diversity (CBD) in May 2008.

9. All FAO Regional Forestry Commissions, held between February and October 2008, were informed of the plan to prepare *The State of the World's Forest Genetic Resources*.

10. FAO has built awareness about the plan to prepare *The State of the World's Forest Genetic Resources* with its main international and regional technical partners on forest genetic resources and gathered inputs from these partners to support the preparation of the analysis of key issues for preparation of *The State of the World's Forest Genetic Resources*. Consultations were organised in collaboration with international partners, in particular Bioversity International and the World Agroforestry Centre (ICRAF), regional networks and national partners:

- Africa: two sub-regional workshops were organised in collaboration with Bioversity International, ICRAF, the Sub-Saharan Africa Forest Genetic Resources Programme (SAFORGEN). A consultation for Eastern and Southern Africa was held in Nairobi, Kenya (January 2009), and another one for Central and Western Africa was conducted in Ouagadougou, Burkina Faso (February 2009).
- Latin America: a regional discussion took place during a meeting of the Latin American Forest Genetic Resources Programme (LAFORGEN). The meeting was organised by Bioversity International, with the support of Spain, in the Agronomic Tropical Center for Research and Training (CATIE), Costa Rica (September 2008).
- Asia-Pacific: a regional workshop was organised in Kuala Lumpur, Malaysia, October 2008, in collaboration with the Asia-Pacific Association of Forest Research Institutions (APAFRI), Asia-Pacific Forest Genetic Resources Programme (APFORGEN), Bioversity International and the Forestry Research Institute of Malaysia (FRIM).

11. At its Nineteenth Session (March 2009), the Committee on Forestry discussed and supported the preparation of *The State of the World's Forest Genetic Resources*, urging member countries to collaborate with FAO and partner organizations in producing the Report, and requesting a specific reference to forest genetic resources in the FAO Forestry Strategy.

12. At its Twelfth Session (October 2009) the CGRFA Commission requested FAO to prepare *The State of the World's Forest Genetic Resources* for consideration at its Fourteenth Regular Session. It stressed that the process for preparing report should be based primarily on Country Reports, with support through the proposed thematic studies and reports from international organizations, as well as inputs from relevant stakeholders. The Commission endorsed the proposed outline and tentative list of thematic studies contained in Annexes 1 and 2. It also agreed on the indicative timeline provided in Annex 3.

13. The primary source of data and information for the preparation of *The State of the World's Forest Genetic Resources* will be Country Reports on Forest Genetic Resources. The Country Report preparatory process will focus on the review of existing data and information and the identification of gaps and needs. Detailed guidelines for Country Reports are being prepared to assist countries to prepare for their Country Reports, as strategic assessments of the status and trends of forest genetic resources, as well as the state of management capacities and needs. In this way, Country Reports will both serve as strategic tool for national efforts to enhance the use, development and conservation of forest genetic resources, as well as provide the basis for preparing the global report on The State of the World's Forest Genetic Resources. FAO will emphasize the importance of preparing the Country Report as a national strategic tool for forest genetic resources, and the need to establish national mechanisms to ensure opportunities for the participation of national stakeholders in the preparation of the Country Report. Countries will be encouraged to hold national workshops and/or other means for consultations with indigenous and local communities and stakeholders in elaborating their Country Reports.

14. FAO will formally request the preparation of Country Reports and the establishment of a National Focal Point on forest genetic resources to serve as the main contact point for FAO during the preparatory process. Subject to the availability of extra-budgetary resources, limited financial assistance will be made available to support developing countries to prepare their Country Reports, including to assist them to conduct workshops and consultations. In addition, FAO and partners will, upon request, provide technical assistance for the preparation of the Country Report. Regional meetings will be held to review Country Reports and discuss common issues, if financial resources are available.

Annex 1: The State of the World's Forest Genetic Resources - Outline by chapter

<i>Chapter Title</i>	<i>Scope of Chapter</i>	<i>Issues and elements</i>
1 Overview of Forest Genetic Resources (FGR)	Definition of FGR - their value and importance – Between and within species diversity - Threats, opportunities and challenges	Characteristics of FGR, differences and similarities between trees and other organisms – Context of FGR management - Main forest management systems (including agroforestry systems) – Concept of Sustainable Forest Management (SFM) - Economic, environmental, social and cultural values of FGR – Role of forest genetic diversity in ecosystem resistance, resilience, and vulnerability - Threats and risk status – causes of genetic erosion
2 The State of Forest Genetic Resources Management	FGR conservation and management – Strategies - Programmes - Implementation	Characterisation of genetic diversity - Conservation <i>in situ</i> and <i>ex situ</i> , genetic improvement programmes and their implementation – Delivery/deployment systems – Role of public and private sectors – Social and economic value of conservation and breeding activities
3 Trends Affecting the Forest Sector and their Implications on Forest Genetic Resources	Assessment of impact of global trends in FGR and their management	Internal and external drivers – Environmental, economic, social, political trends and outlook - Positive and negative implications - Threats and opportunities
4 The State of Capacities	Capacities of stakeholders and institutions involved in FGR management and conservation	Infrastructures, institutional and human capacities – Public and private sectors, including at local level – Capacities in: development and implementation of FGR conservation and management strategies, tree genetic improvement, information sharing and networking, mainstreaming FGR management into forest management and broader international, regional and national policies and programmes – Training capacity
5 Institutional and Policy Framework	Institutional, policy and legal framework for FGR management at national, regional and global level	Institutions responsible for FGR management, including coordination mechanisms – Legal framework and traditional use rights in FGR management - FGR in national forest programmes and other national strategies and policies (poverty reduction, biodiversity, land degradation and desertification, climate change, etc) – International and regional agreements/treaties – Frameworks for transfer of forest reproductive material
6 Status of Knowledge – Current and Emerging Technologies	Current knowledge and gaps in characterisation and improvement – Current and emerging methodologies and technologies	Characterisation – Technologies for conservation – Marker-assisted selection – Propagation and dissemination technology and methods - Participatory tree domestication – Applications of biotechnologies – Challenge of combining biotechnology tools and traditional tree improvement
7 Needs, Challenges and Required Responses for the Future	Synthesis and recommendation for action	Syntheses of needs and challenges identified in previous chapters – Priorities for future action

Annex 2: The State of the World's Forest Genetic Resources - indicative list of thematic background studies

<i>Subject</i>	<i>Rationale</i>	<i>Scope</i>
1 Indicators of forest genetic diversity, erosion and vulnerability	Lack of indicators at global and national levels that are scientifically sound, realistic and policy relevant, for defining baseline and for monitoring	Review of existing knowledge, experience and efforts to suggest the way forward to develop appropriate indicators
2 Understanding genetic diversity of tropical species in natural forests	Knowledge on life-history traits and genetic diversity is lacking or inadequate for most species to define and implement conservation strategies	Review and syntheses of available knowledge and experience. Proposal of research programmes to improve knowledge on genetic diversity of priority species.
3 New technologies to support conservation of FGR	Many forest species are difficult to conserve <i>in situ</i> and/or <i>ex situ</i> , because of their biological characteristics (<i>i.a.</i> recalcitrant-intermediate seeds) and management context	Review of knowledge and experience. Assessment of technologies available and their effectiveness for conservation <i>in situ</i> and <i>ex situ</i> of genetic resources of priority species, and suggest the way forward
4 Use and transfer of FGR	Transfer and exchange are regulated under international agreements, which, in some cases, can result in constraints for programmes to improve knowledge on, and to develop FGR	Review of legal and phytosanitary frameworks, schemes for the transfer of reproductive material, their implementation and impact on transfer of FGR. Recommendations to facilitate safe movement of FGR
5 FGR role in adaptation to biotic and abiotic factors, with a focus on climate change	The role of FGR is generally acknowledged, but needs to be better characterised	FGR and vulnerability of species to biotic and abiotic events and process. Resilience and resistance. FGR in mitigation and adaptation to climate change
6 FGR in relation to bio-energy	Development of bio-energies brings to FGR management both threats and opportunities, which need to be reviewed and assessed	With focus on FGR, different types of bio-energy – current situation and opportunities offered by new technologies. Use/improvement of new species. Role of private sector; public-private partnerships
7 Use of FGR in decentralised development for poverty alleviation and livelihood improvement	Decentralised/local management of forest resources is gaining importance, involving new approaches and technologies in management of FGR. The experience gained in this new area is useful to synthesise	Experience and results in local, participatory conservation and improvement of species for different uses. Analyses of successes and failures. Role and capacity of stakeholders (public and private sectors, communities, etc). Identification of needs and gaps.

8 Biotechnologies	Biotechnologies are a quickly evolving field. Their application and potential contribution to FGR conservation and management should be regularly reviewed/updated.	Review of current and future developments and trends in biotechnologies and their application to conservation, management and improvement of FGR (include, but not limited to genetic engineering – threats and opportunities)
9 Effects of silvicultural practices on genetic diversity	It is generally acknowledged that silvicultural practices influence the genetic structure of the species. Knowledge available on some species and silvicultural systems should be synthesised and efforts expanded to cover a broader array of key species and situations.	Review and synthesise available experience and knowledge. Identification of gaps. Proposals for action concerning key species and management systems.
10 Use of native species	There is a renewed interest for the use of native species in <i>i.a.</i> ecosystem and landscape restoration, agroforestry systems and spatial combination with high yielding planted forests for maintenance of overall biodiversity. The experience gained is useful to review and synthesise for further development.	Review and syntheses of experience and results. Analysis of successes and failures in the different systems. Definition of best practices. Identification of needs and gaps.
11 History of use and management of forest resources and impact on FGR	There are many cases, where geographical distribution and genetic patterns of forest species were influenced by human activities and policies, which are interesting to present to illustrate the historical dimension of FGR management (contribution to Chapter 1).	Case studies on <i>i.a.</i> human pressures on Mediterranean forests and their impact on FGR, African agroforestry parklands, <i>Pinus pinea</i> , etc.
12 Trends in management of FGR by the private/corporate sector	The role of the private sector (from local communities and smallholders to corporate companies) in management of FGR is increasing. Current and potential impact of this trend should be analysed to define actions needed.	Corporate priorities and policies and their consequences: <i>i.a.</i> short term vs. long term, productivity vs. diversity, short life span, volatility of corporate investment and potential threats due to discontinuity. Management of FGR by local communities. Capacity. Role of public sector. Recommendations.

**Annex 3: *The State of the World's Forest Genetic Resources*
Indicative timetable for the preparatory process**

2010

- Invitation of countries to nominate national focal points for the preparation of country reports for *The State of the World's Forest Genetic Resources*. Initiation of preparation of country reports through national focal points.
- FAO to assist countries to prepare their country reports, in collaboration with regional networks, including through global and regional workshops for national focal points.
- Strengthening and further development of the FAO global information system on forest genetic resources (REFORGEN).
- Preparation of thematic studies.
- Request to international organizations to submit reports on their activities, data and possible areas of cooperation in relation to *The State of the World's Forest Genetic Resources*.
- Committee on Forestry (COFO): Review progress in the preparation of *The State of the World's Forest Genetic Resources*.

2011

- Intergovernmental Technical Working Group on Forest Genetic Resources: Review progress in preparation of *The State of the World's Forest Genetic Resources*
- **CGRFA-13**: Review progress in preparation of *The State of the World's Forest Genetic Resources*.

2012

- Compilation and analysis of country reports, thematic studies and reports from international organizations.
- Preparation of the draft of *The State of the World's Forest Genetic Resources*.
- Committee on Forestry (COFO): consider progress in the preparation of *The State of the World's Forest Genetic Resources*.

2013

- Intergovernmental Technical Working Group on Forest Genetic Resources:
 - Review the Draft *The State of the World's Forest Genetic Resources*.
 - Review possible follow-up to *The State of the World's Forest Genetic Resources*.

2013 / CGRFA-14 PRESENTATION OF THE STATE OF THE WORLD'S FOREST GENETIC RESOURCES

- Consider follow-up to *The State of the World's Forest Genetic Resources*, including holding regional consultations to identify priority areas for action.

2014

- Presentation of *The State of the World's Forest Genetic Resources* to COFO, the United Nations Forum on Forests (UNFF) and the Conference of the Parties (COP) to the Convention on Biological Diversity (CBD).