CGRFA/WG-FGR-3/14/REPORT

Commission on
Genetic Resources
for Food and Agriculture

Intergovernmental Technical Working Group on Forest Genetic Resources

Rome, Italy
7 - 9 July 2014

Third Session

Food and Agriculture Organization
of the United Nations

CGRFA/WG-FGR-3/14/REPORT

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

REPORT OF THE THIRD SESSION OF THE INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON FOREST GENETIC RESOURCES

Rome, Italy, 7-9 July 2014

FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS
Rome, 2014

The documents prepared for the Third Session of the Working Group on Forest Genetic Resources of the Commission on Genetic Resources for Food and Agriculture are available on the Internet at the following address:

http://www.fao.org/forestry/fgr/86104/en/

They may also be obtained from:

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I. INTRODUCTION

1. The Third Session of the Intergovernmental Technical Working Group on Forest Genetic Resources (Working Group) was held in Rome, Italy, from 7 to 9 July 2014. The members of the Working Group are listed in *Appendix E*, the list of delegates and observers is available on the FAO Web site.[1]

II. OPENING OF THE SESSION AND ELECTION OF THE CHAIR, VICE-CHAIRS AND *RAPPORTEUR*

2. Ms A. Lolona Ramamonjisoa Ranaivoson (Madagascar), Chair of the Second Session of the Working Group, welcomed delegates and observers. She highlighted the importance of the meeting in light of the launch of *The State of the World's Forest Genetic Resources* (SoW FGR). She reminded the Working Group that *The Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources* (GPA) was adopted by the FAO Conference in June of last year and stressed the need to turn the knowledge gained and the political commitment reflected by the GPA into action.

3. The Working Group elected Mr Pierre Nicolas Stephane Bouillon (France) as Chair. The Working Group then elected Mr Augustin Ngoliele (Congo), Mr Faqiang Huang (China), Ms Roberta Maria Lima Ferreira (Brazil), Mr Abbas Ghamari Zare (Iran) and Ms Tannis Beardmore (Canada) as Vice-Chairs. Mr Faqiang Huang (China) was elected *Rapporteur*.

4. Mr Eduardo Mansur, Director, Forest Assessment, Management and Conservation Division, welcomed members of the Working Group and observers. He stressed that as genetic diversity provides the fundamental basis for the evolution of forest and tree species and for their adaptation to changes, including climate changes, the conservation of forest genetic resources is vital as they are a unique and irreplaceable resource for the future. Mr Mansur highlighted the role of the SoW FGR as important baseline information for monitoring and assessing the progress of FGR management, covering 86 countries. With regard to the GPA, he noted that this is the starting point for countries and stakeholders to take action on the priority issues identified in the GPA, and that FAO is ready to provide technical support.

5. Mr Dan Leskien, Officer-in-charge, Secretariat of the Commission on Genetic Resources for Food and Agriculture, thanked the outgoing Chair and congratulated the new Chair on his appointment. He pointed out that the SoW FGR is the result of a process initiated by the Commission with its current 178 member countries, and that the report is based on reports of 86 countries representing over 85 percent of global forest cover. He stressed that at each step of the Commission's work cycle, consisting of country reporting, global assessments, policy response, implementation and monitoring/reporting, the Commission focuses on technical and/or policy work at country level. Mr Leskien noted the importance of the SoW FGR as a milestone, both for the forestry

[1] http://www.fao.org/forestry/fgr/86104/en/

sector and the Commission. However, the SoW FGR and the GPA were the beginning, rather than the end, of a process and the task was now to consider measures to implement and monitor the GPA considering technical and financial resources.

6. Mr Douglas McGuire, FAO Senior Forestry Officer, Secretary of the Working Group, stressed the significance of the SoW FGR and the GPA as a pivotal starting point that forms the basis for moving forward, and confirmed that, subject to the availability of the necessary funding, the implementation of the GPA would have the full support of FAO. He stressed the importance of mainstreaming of FGR and the need to bring into context other thematic areas.

7. The Working Group adopted the Agenda, as given in *Appendix A*.

III. FOLLOW-UP TO THE *GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF FOREST GENETIC RESOURCES*

8. The Working Group considered the document *Follow-up to the Implementation of Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*.[2] It stressed the importance of compiling and publishing all the country reports, including those that had been finalized after the completion of the SoW FGR.

9. The Working Group recommended that the Commission request FAO to continue providing its technical support on FGR to countries, especially in the context of the *Strategy for the Implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*, to be adopted by the Commission. The Working Group also recommended that the Commission request FAO that these efforts be supported by the FAO Regional Forestry Commissions. The Working Group further recommended that the Commission encourage FAO to make efforts to involve the whole forestry sector in the implementation of the GPA.

10. The working group acknowledged the importance of REFORGEN as a knowledge-sharing platform and recommended that the Commission request FAO to update the REFORGEN database to include information from the current and future country reports.

11. The Working Group welcomed FAO's collaboration with regional and international organizations, such as the Convention on Biological Diversity, the Organisation for Economic Co-operation and Development, and Bioversity International, working on programmes related to FGR in support of the Strategy for the Implementation of the GPA to be adopted by the Commission.

12. The Working Group recommended that the Commission request FAO that further work be carried out in the four priority areas of the GPA (improving availability of, and access to, information on FGR; *in situ* and *ex situ* conservation of FGR; sustainable use, development and management of FGR; and policies, institutions and capacity building) and that the current work at ecosystem level be broadened to include the species level.

IV. STRATEGY FOR THE IMPLEMENTATION OF THE *GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF FOREST GENETIC RESOURCES*

13. The Working Group considered the document *Strategy for the Implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*.[3] It stressed the need to look for a common overarching framework for all genetic resources, especially in communication and advocacy and with regard to funding mechanisms and building on common work.

14. The Working Group recommended that FAO encourage its Members to develop national plans of action for the conservation, sustainable use and development of FGR, possibly by

[2] CGRFA/WG-FGR-3/14/2.
[3] CGRFA/WG-FGR-3/14/3.

providing a guidance document. The Working Group agreed on the need to consider synergies and linkages between the GPA and National Biodiversity Strategies and Action Plans (NBSAP) and other relevant planning processes in order to avoid duplication of efforts and be effective.

15. The Working Group recommended that the Commission request FAO to further work on the *Draft Strategy for the Implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources,* as provided in *Appendix B* to this report, taking into consideration that the Working Group:

- Stressed the importance of section III and recommended including a reference to the National Forest Programmes;
- Discussed the frequency of national implementation reports[4] and recommended that the Commission adopt an interval of 5 years; and
- Discussed the funding options and recommended that FAO provide clarification concerning funding mechanisms to fund this work, including on the possibility of a trust fund and the incorporation of FGR-related activities into existing funding mechanisms, to the Commission.

V. TARGETS AND INDICATORS FOR FOREST GENETIC RESOURCES

16. The Working Group considered the document *Targets and Indicators for Forest Genetic Resources*.[5] It welcomed and revised the *Summary list of Strategic Priorities and Proposed Indicators*.[6]

17. The Working Group recommended that the number of indicators be reduced to few key verifiable indicators and made suggestions for revision of those indicators from Priority Area 1 through Priority Area 3, as contained in the revised list given in *Appendix C* to this report.

18. The Working Group recommended that the Commission request that a consultative process coordinated by FAO be initiated to further define the list of verifiable indicators. It further recommended that the refined list of indicators be submitted in due time to the next session of the Working Group for its consideration.

19. The Working Group recommended that the Commission request FAO to continue the work on indicators and to prepare for the next session of the Working Group a set of targets for the conservation, sustainable use and development of FGR as well as a draft schedule for monitoring the implementation of the GPA FGR.

VI. GENETIC DIVERSITY AND CLIMATE CHANGE

20. The Working Group considered the document *Genetic Diversity and Climate Change*[7] and took note of the *Draft Guidelines for the integration of genetic diversity considerations into climate change adaptation planning*,[8] with particular reference to forest genetic resources.

21. The Working Group reviewed the draft guidelines and provided comments. It recommended that a revised version of the draft guidelines be presented to the Commission at its Fifteenth Regular Session for endorsement.

22. The Working Group recommended that the Commission encourage its members to integrate genetic diversity considerations into their national adaptation planning using the guidelines, as appropriate.

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[4] CGRFA/WG-FGR-3/14/3, *Appendix I*, section VII.
[5] CGRFA/WG-FGR-3/14/4.
[6] CGRFA/WG-FGR-3/14/4 *Appendix I.*
[7] CGRFA/WG-FGR-3/14/5 Rev.1.
[8] CGRFA/WG-FGR-3/14/Inf.4.

23. The Working Group recommended that the Commission stress the need for technical and awareness-raising material and request FAO to publish and widely distribute the guidelines to raise awareness among decision makers and relevant stakeholders.

VII. BIODIVERSITY AND NUTRITION

24. The Working Group considered the document *Biodiversity and Nutrition*,[9] and welcomed the *Draft Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans of Action on Nutrition*.[10]

25. The Working Group recommended that the Commission stress the importance of the link between nutrition and forestry and, in particular, the important role of forest derived wild food as a genetic resource pool and for food security and nutrition. It suggested that the draft guidelines refer to existing efforts in this area of work, in particular to the International Conference on Forests for Food Security and Nutrition held in May 2013 in Rome.

26. The Working Group further recommended that a revised version of the draft guidelines in which the role of forests is more clearly explained be presented to the Commission at its Fifteenth Regular Session for endorsement.

VIII. APPLICATION AND INTEGRATION OF BIOTECHNOLOGIES FOR THE CONSERVATION AND SUSTAINABLE UTILIZATION OF GENETIC RESOURCES FOR FOOD AND AGRICULTURE

27. The Working Group considered the document *Application and integration of biotechnologies for the conservation and sustainable utilization of genetic resources for food and agriculture*.[11]

28. The Working Group highlighted that the development of new technologies, including biotechnology, and their applications in tree breeding and genetic resources conservation, is expanding although at a much slower speed in developing countries and in the tropics in general. In general current uses of biotechnologies in forestry fall broadly into three categories: those based on molecular markers; those that enhance vegetative propagation, e.g. micropropagation; and the use of genetically modified (GM) trees in research and use in countries where regulations allow their release into the environment after evaluation of impacts and benefits. Tools used in biotechnology differ slightly between studies related to naturally regenerated forest and those related to planted forest.

29. The Working Group recommended that the Commission request FAO to continue its efforts:

- to strengthen the national and regional capacities of developing countries to develop appropriate biotechnologies for the characterization, conservation and utilization of genetic resources for food and agriculture, taking into consideration relevant benefits, risks, regulations, relevant national and regional laws and regulations, and international instruments;
- to strengthen its activities for the regular dissemination of updated factual information on the role of biotechnologies for the characterization, conservation and utilization of genetic resources for food and agriculture through its existing databases, networks and newsletters, emphasizing also communication of biotechnology developments to the public; and
- to explore mechanisms for future cooperation with relevant international organizations, including for fostering North–South and South–South cooperation for addressing (1) benefits and risks of biotechnologies and (2) using appropriate

[9] CGRFA/WG-FGR-3/14/6.
[10] CGRFA/WG-FGR-3/14/6, *Appendix I.*
[11] CGRFA/WG-FGR-3/14/7.

biotechnologies for the characterization, conservation and utilization of genetic resources for food and agriculture.

IX. ACCESS AND BENEFIT-SHARING FOR FOREST GENETIC RESOURCES

30. A joint session of the Working Group and the Commission's Team of Technical and Legal Experts on Access and Benefit-sharing (ABS Expert Team) was held in the afternoon of 8 July 2014. The joint session was co-chaired by the Chair of the Working Group and the Chair of the ABS Expert Team, Mr Javad Mozafari Hashjin (Islamic Republic of Iran).

31. Ms Kathryn Garforth, Secretariat of the Convention on Biological Diversity, provided information on the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization to the Convention on Biological Diversity (Nagoya Protocol). Mr Kent Nnadozie, Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (Treaty), gave an overview of the Treaty, including the on-going process under the Treaty to enhance the functioning of the Multilateral System of Access and Benefit-Sharing.

32. The Working Group and the ABS Expert Team considered the document *Access and Benefit-sharing and Forest Genetic Resources*.[12] They took note of the *Government submissions on conditions under which specific genetic resources for food and agriculture are exchanged and utilized*,[13] of the *Submissions of stakeholders on voluntary codes of conduct, guidelines and best practices and/or standards in relation to access and benefit-sharing for all subsectors of genetic resources for food and agriculture*,[14] and of the *Explanatory notes to the distinctive features of genetic resources for food and agriculture*.[15] The Working Group took note that ABS issues should be further explored in light of the information provided in the document, and requested guidance with regard to the development of elements on ABS for FGR.

33. The Working Group recalled its work on the distinctive features of forest genetic resources, as reflected in the report of the Commission's Fourteenth Regular Session.[16] The Working Group took note of the on-going process under the Treaty to develop a range of measures that will: (a) increase user-based payments and contributions to the Benefit-sharing Fund in a sustainable and predictable long-term manner, and (b) enhance the functioning of the Multilateral System by additional measures, and recommended that the Commission and the Working Group be informed about progress and the results of this process.

34. The Working Group explored ABS issues for its subsector, in the light of information received and provided inputs and guidance with regard to the work of the ABS Expert Team on *Draft Elements to Facilitate Domestic Implementation of Access and Benefit-Sharing for Different Subsectors of Genetic Resources for Food and Agriculture* and provided a draft list of *Aspects of Forest Genetic Resources to consider when dealing with Access and Benefit Sharing* as presented in *Appendix D* to this report. Issues raised included: the definition of "forest genetic resources" and of "forest genetic resources for food and agriculture"; the meaning of "genetic utilization" in the context of (e.g. provenance trials of) forest genetic resources; the need for information on cases of unauthorized/ denied access; existing (national, regional or global) exchange practices and the volume of exchanges of forest genetic resources; reasons justifying special or equal treatment of forest genetic resources vis-à-vis other genetic resources.

35. The Working Group suggested that the ABS Expert Team take note of the Nordgen Report on *Access and rights to the forest genetic resources in the Nordic Region*.[17]

[12] CGRFA/WG-FGR-3/14/8 Rev.1.
[13] CGRFA/WG-FGR-3/Inf.5.
[14] CGRFA/WG-FGR-3/Inf.6 Rev.1.
[15] CGRFA/WG-FGR-3/Inf.7.
[16] CGRFA-14/13/Report, *Appendix E*.
[17] *See* CGRFA/WG-FGR-3/14/Inf.6 Rev.1, p. 10.

36. The Working Group recommended that forest experts representing different regions and production systems be involved in future work of the ABS Expert Team. It recommended that the Draft Elements be shared with the Working Group, at its fourth session, for review.

X. OTHER BUSINESS

37. Mr Bernd Bultemeier, Evaluation Manager and Team Leader, introduced the on-going evaluation of FAO's work on genetic resources and requested that the Working Group provide inputs and comments, as well as country examples, to further develop FAO's work on this topic. It was noted that the outcome of the evaluation will be presented to the Programme Committee later in the year.

XI. CLOSING STATEMENTS

38. The Chair congratulated the Working Group and observers on their accomplishments and stressed that the outcomes of this meeting were essential to guide FAO's work and prepare the deliberations for the forthcoming session of the Commission. The Chair thanked the Working Group for its work and expressed satisfaction with the Working Group's recommendation regarding the Strategy for Implementation of the GPA and in respect to indicators on FGR. The Chair thanked the *Rapporteur*, all the delegates and observers and the Secretariat for their contributions to the success of this meeting.

39. Mr Leskien thanked the Chair, delegates and all staff involved for their contributions. He reflected on a challenging week during which two Intergovernmental Technical Working Groups had met and joint meetings of these working groups with the Commission's Team of Technical and Legal Experts on Access and Benefit-sharing had been held. He thanked the Working Group for its active and engaged participation.

40. Mr McGuire thanked the Chair, delegates, and FAO staff for having made the meeting a success. He expressed satisfaction about the decisions taken by the Working Group and reiterated FAO's willingness to continue to cooperate with countries on their FGR related activities.

APPENDIX A

AGENDA OF THE INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON FOREST GENETIC RESOURCES

Third Session

Rome, 7 - 9 July 2014

1. Election of the Chair, the Vice-Chair(s) and the *Rapporteur*
2. Adoption of the agenda and timetable
3. Follow-up to the *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*
   - 3.1 Strategy for the implementation of the *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*
   - 3.2 Targets and indicators for forest genetic resources
4. Genetic diversity and climate change
5. Biodiversity and nutrition
6. Application and integration of biotechnologies
7. Access and benefit-sharing for forest genetic resources
8. Other business
9. Adoption of the Report

APPENDIX B

DRAFT STRATEGY FOR THE IMPLEMENTATION OF THE GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF FOREST GENETIC RESOURCES

OBJECTIVE

The aim of this Implementation Strategy is to identify tools and mechanisms through which the Commission can support and strengthen the implementation of the *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources* (GPA FGR), adopted by the FAO Conference at its 38th session in June 2013.

AIMS OF THE GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF FOREST GENETIC RESOURCES

As stated in its paragraph 16, the aims of the GPA FGR are:

- to strengthen understanding and knowledge of forest genetic resources (FGR);
- to promote the sustainable use and management of FGR;
- to develop and strengthen *in situ* and *ex situ* FGR conservation programmes through collaboration at national, regional and global levels;
- to promote access to, and sharing of, information on FGR at regional and national levels;
- to create and strengthen national programmes to increase regional and international cooperation, including in research, education and training on the use and sustainable management of FGR, and to enhance institutional capacity;
- to assist countries, as appropriate, to integrate FGR conservation and management needs into wider national policies and programmes and frameworks of action at national, regional and global levels;
- to promote the assessment of FGR-related traditional knowledge, innovations and practices, the equitable sharing of benefits arising from their use, the recognition of their roles, and, where appropriate, the putting in place of effective policies and legislation addressing these matters;
- to promote adequate access to, and use of, quality forest reproductive material to support research and development programmes at national and regional levels and in line with the international laws and regulations regarding intellectual property;
- to promote ecosystem and ecoregional approaches as efficient means of promoting sustainable use and management of FGR;
- to assist countries and institutions responsible for the management of FGR to establish, implement and regularly review national priorities for the sustainable use and management of FGR; and
- to strengthen national programmes and enhance institutional capacity – in particular, in developing countries and countries with economies in transition – and develop relevant regional and international programmes. Such programmes should include education, research and training to address the characterization, inventory, monitoring, conservation, development and sustainable use of FGR.

MONITORING AND REVIEW OF THE IMPLEMENTATION STRATEGY

The Commission will monitor the execution of and review and revise this implementation strategy, as necessary and appropriate, to respond to gaps and needs in the implementation of the GPA FGR.

IMPLEMENTATION STRATEGY AREAS

This Implementation Strategy foresees specific action in the following areas:

- Advocacy and international awareness;
- Development and support of relevant global and regional networks;
- Supporting countries in the development of national and regional strategies for the implementation of the GPA FGR;
- Supporting countries in securing adequate and sustainable funding for the implementation of the GPA FGR;
- Development of international technical standards for FGR and support to implement them;
- Funding strategy for the implementation of GPA FGR; and
- Monitoring and reporting on the implementation of the GPA FGR and the status and trends of FGR.

I. Advocacy and international awareness

Strategic Priority 26 requires advocacy measures and tools to be developed at international level to ensure effective communication and information sharing related to the conservation sustainable use and development of FGR.

The first report on *The State of the World's Forest Genetic Resources,* as well as the Synthetic Account[18] are important communication and awareness-raising tools. However, it will be important to develop a communication strategy that communicates the essential value of FGR and the need to take action for their sustainable management and use to (1) policy makers and (2) forestry technicians and administration managers.

> ACTION: The Commission invites FAO to develop a communication strategy and tools to ensure effective communication and information sharing related to the conservation sustainable use and development of FGR. In collaboration with its partners, FAO should contribute to the training of forestry technicians and administration managers.

II. Development and support of relevant global and regional network

Strategic Priorities 24 and 25 encourage the establishment and strengthening of regional and global networks.

Regional coordination is needed, recognizing that gene flow does not stop at national borders and many issues are best addressed across countries. The FAO Regional Forestry Commissions should play an important role in this regard. Regional intergovernmental institutions/processes such as Forest Europe, the Central Africa Forests Commission (COMIFAC), the Secretariat of the Pacific Community (SPC), and the Amazon Cooperation Treaty Organization have an important role and mandate in sustainable forest management at the regional level. They will need to play a key role in the implementation of the GPA-FGR, including by facilitating its integration, as considered relevant, into regional strategies and programmes. Regional networks (e.g. EUFORGEN, SAFORGEN,

[18] FAO 2014. The State of the World's Forest Genetic Resources – Synthetic Account.

LAFORGEN, APFORGEN) are well placed to enhance coordination and collaboration between research institutions, on technology, monitoring, *in situ* and *ex situ* conservation, awareness raising, policy implementation, resource mobilization and information sharing.

Regional networks may play an essential role for the implementation of the GPA FGR by:

- Promoting efficient monitoring and reporting on the status FGR for transnational species;
- Coordinating risk assessments and conservation measures for regionally important species;
- Identifying research needs and planning and developing joint project proposals;
- Acting as an independent "honest broker" to facilitate bilateral and multilateral cooperation among countries and for mobilizing funds for tasks;
- Developing and maintaining regional databases for FGR;
- Encouraging and promoting genetic improvement programmes and domestication for valuable tree species as a component of forest conservation and as a contribution to livelihoods;
- Building consensus on regional issues and policies affecting FGR;
- Promoting awareness of FGR issues within regional organizations and forums;
- Strengthening the voice for the region in international discussions on FGR conservation and management.

ACTION: The Commission encourages international and regional networking and requests FAO, in collaboration with its partners, to support and strengthen existing networks subject to the availability of the necessary resources, including through series of workshops and the identification of best practices of information sharing, regional and global networking, which enhance coordination and collaboration on technology, monitoring, *in situ* and *ex situ* conservation, awareness raising, policy implementation, resource mobilization and information sharing. The Commission further recommends that FAO identify strategic partners, including international organizations, relevant centers of the Consultative Group on International Agricultural Research (CGIAR) and other research organizations and NGOs, to play a facilitation role in the implementation of specific strategic priorities.

III. Supporting countries in the development of national and regional strategies for the conservation, sustainable use and development of forest genetic resources

Strategic Priority 18 explicitly recognizes the importance of national strategies for *in situ* and *ex situ* conservation of FGR and their sustainable use. The GPA FGR provides an agreed international framework for efforts to enhance the sustainable management and use of FGR. The aim is clear: to support the sustainable use and management of FGR to ensure that forest trees can survive, adapt and evolve under changing environmental conditions in order to meet present and future challenges of food security, poverty alleviation and sustainable development.

National and regional strategies provide effective means to translate the GPA FGR and the international momentum that has been created into national and regional actions needed to ensure the implementation of the GPA FGR. Well-prepared Regional as well as National Strategy and Action Plans may provide a basis for identifying the national, regional and global interventions that will most effectively mobilize and use financial resources for capacity building in forest genetic resources management.

Regional and national strategies and action plans may include, but not be limited to: Identifying priorities within the GPA-FGR; establishing and/or strengthening monitoring systems and evaluating

status and threats to FGR; appointing national focal points and stakeholder committees overseeing the implementation of the GPA FGR and reporting to the Commission.

ACTION: FAO is requested to develop Guidelines for the preparation of regional and national strategies and action plans for the conservation, sustainable use and development of FGR and as appropriate develop synergies with other relevant instruments and strategies such as the National Biodiversity Strategy and Action Plan (NBSAP).

IV. Support countries in securing adequate and sustainable funding for the implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources

Strategic Priority 27 calls for assistance to countries and stakeholders to design appropriate programmes for the conservation, sustainable use and development of FGR and to secure adequate and sustainable funding.

Information on donor mandates, policies, eligibility criteria, and procedures for submitting funding proposals may help countries to more effectively mobilize financial resources and to secure funding from sources previously not available. Such information could be collected and maintained by FAO and made available to the members of the Commission.

ACTION: FAO is requested to collect, maintain and regularly update on its website information on donor mandates, policies, eligibility criteria, and procedures for submitting funding proposals for the conservation, sustainable use and development of FGR. FAO is further requested to inform donors, as appropriate, of the importance and role of FGR in contributing to solving important global issues such food insecurity, land degradation and climate change effects and to put efforts in joint project development and implementation.

V. Development of international technical standards for the conservation, sustainable use and development of FGR and support to implement them

Strategic Priority 3 calls for the development of international technical standards, protocols and indicators for FGR inventories, characterization and monitoring of trends and risks. A set of proposed indicators for assessing the status and trends of FGR can be found in the FAO thematic study on indicators,[19] however more work is still necessary to further develop indicators and to make them operational.

ACTION: FAO is requested to strengthen collaboration with relevant partners, including the CGIAR centres, and to further develop, subject to the availability of the necessary funds, international technical standards, protocols and indicators for assessing the status and trends of FGR and for the characterization and monitoring of trends and risks within national forest inventories and other forest-related programmes.

VI. Funding strategy for the implementation of GPA FGR

While the GPA FGR does not call for the establishment of a funding strategy for the implementation of the GPA FGR, its effective implementation, in particular in developing countries, will depend on the availability of additional financial resources.

ACTION: FAO is requested to prepare a draft Funding Strategy for the Implementation of the GPA FGR, including procedures for the use of resources under a FAO Trust Account to be established.

[19] Graudal, L. et al. 2014. *Indicators of forest genetic diversity, erosion and vulnerability*. Thematic Study for The State of the World's Forest Genetic Resources. Rome, FAO (In press).

VII. Monitoring and reporting on the implementation of the GPA FGR and the status and trends of FGR.

The Second Report on the State of the World's Forest Genetic Resources is currently scheduled for 2022/23 (CGRFA-19)[20]. Between now and then, countries/ focal points should report in regular intervals on their implementation of the GPA FGR. National strategies and action plans for the implementation of the GPA FGR could be made available by FAO on a dedicated website. In addition, status of implementation reports and reports on the status and trends of FGR could be uploaded by countries (or their national focal points) on a dedicated website. This would require an agreement of the Commission on reporting intervals. On the basis of country reports received, FAO could publish status and trends report at regular intervals and the Working Group FGR and the Commission could review them.

> ACTION: FAO is requested to provide, for review by the Working Group and the Commission, at their next sessions, a draft Schedule and guidelines in line with the approved indicators, for Monitoring and Reporting on the Implementation of the GPA FGR.

[20] See CGRFA-14/13/Report, Appendix I, Table 1.

APPENDIX C

SUMMARY LIST OF PROPOSED INDICATORS

Priority area	Strategic priority	Level[×]	Verifiable indicator
Priority area 1: Improving the availability of, and access to, information on FGR	SP1. Establish and strengthen national FGR assessment, characterization and monitoring systems	N	Trend in number and proportion of species for which distribution is known, FGR are monitored and characterized and for which information are available in REFORGEN.
	SP2. Develop national and subnational systems for the assessment and management of traditional knowledge on FGR	N	
	SP3. Develop international technical standards and protocols for FGR inventories, characterization and monitoring of trends and risks	I	
	SP4. Promote the establishment and the reinforcement of FGR information systems (databases) to cover available scientific and traditional knowledge on uses, distribution, habitats, biology and genetic variation of species and species populations	I, R, N	
Priority area 2: *In situ* and *ex situ* conservation of FGR	SP5. Strengthen the contribution of primary forests and protected areas to *in situ* conservation of FGR	N	Trend in number of tree species populations within Primary forest or Protected Areas, managed as seed sources for provision of forest reproductive and/or directly targeted for conservation.
	SP6. Promote the establishment and development of efficient and sustainable *ex situ* conservation systems, including *in vivo* collections and genebanks	N	Trend in number of tree species conserved in genebanks (seed banks, clone banks, DNA banks, pollen banks), arboreta, conservation plantations and trend in number of trials contributing to conservation.
	SP7. Support assessment, management and conservation of marginal and/or range limits forest species populations	N	Trend in number and proportion of marginal and/or range limits forest species populations directly targeted by conservation programmes.
	SP8. Support and develop sustainable management and conservation of FGR on farmland	N	Trend in number and proportion of important agroforestry species for which there is a conservation and/or sustainable use and management programme.
	SP9. Support and strengthen the role of forests managed by indigenous and local communities in the sustainable management and conservation of FGR	N	Trend in number, proportion and area of forests or conservation stands managed by local communities or indigenous people.

Priority area	Strategic priority	Level[×]	Verifiable indicator

[×] N= National; I=International; R=Regional.

Priority area	Strategic priority	Level[×]	Verifiable indicator
	SP10. Identify priority species for action	N	Trend in number and proportion of priority species identified for action by countries.
	SP11. Develop and implement regional *in situ* conservation strategies and promote ecoregional networking and collaboration	N, R	Number of species for which relevant effective regional conservation networks and/or programmes exist and are maintained over time.
	SP12. Develop and reinforce national seed programmes to ensure the availability of genetically appropriate tree seeds in the quantities and of the (certified) quality needed for national plantation programmes	N	1- Number of national seed programmes that specifically integrate the importance of genetically appropriate tree seeds in the quantities and of the (certified) quality needed for national plantation programmes. 2- Trend in number of tree species and seed sources which are managed for use of forest reproductive material.
Priority area 3: Sustainable use, development and management of FGR	SP13. Promote restoration and rehabilitation of ecosystems using genetically appropriate material	N	Science based guidelines/regulations for restoration and rehabilitation of ecosystems using genetically appropriate material (e.g. for matching species, seed source, planting sites, composition and harvest of seed sources, number of mother trees, etc.) are developed, and implemented.
	SP14. Support climate change adaptation and mitigation through proper management and use of FGR	N	Science based guidelines/regulations to support climate change adaptation and mitigation through proper management and use of FGR (e.g. for matching species, seed source, planting site, composition and harvest of seed sources, number of mother trees, under climate change scenarios) are developed, and implemented.
	SP15. Promote appropriate use of emerging technology to support the conservation development and sustainable use of FGR	N	Trend and number of species subject to biotechnology research and/or applications, to support conservation and sustainable management programmes.
	SP16. Develop and reinforce research programmes on tree breeding, domestication and bioprospection in order to unlock the full potential of FGR	N	1- Change in number of operational tree improvement and breeding programmes/institutions. 2- Trend and number of faculties or graduate schools with tree improvement and breeding programmes.
	SP17. Develop and promote networking and collaboration among concerned countries to combat invasive species (animals, plants and micro-organisms) affecting FGR	N	1- A relevant network that assesses the impact of management of invasive species on FGR exists is effective and maintained over time. 2- Trend and number of invasive species affecting forest genetic resources.
	SP18. Develop national strategies for *in situ* and *ex situ* conservation of FGR and their sustainable use	N	Policy tools for *in situ* and *ex situ* conservation of FGR in place in each country.

[×] N= National; I=International; R=Regional.

Priority area	Strategic priority	Level	Verifiable indicator
Priority area 4: Policies, institutions and capacity-building	SP19. Update FGR conservation and management needs and integrate them into wider policies, programmes and frameworks of action at national, regional and global levels	N	Relevant FGR assessment parameters are included in National Forest Inventories (NFI) and National Forest Monitoring Programmes.
	SP20. Develop collaboration and promote coordination of national institutions and programmes related to FGR	N	Trend in number of national coordination institutions that include FGR and the implementation of the GPA FGR.
	SP21. Establish and strengthen educational and research capacities on FGR to ensure adequate technical support to related development programmes	N	1- Number of university courses/ training courses offered in forest genetics related subjects. 2- Trend in number of tree geneticists and tree breeders.
	SP22. Promote the participation of indigenous and local communities in FGR management in the context of decentralization	N	Trend in number, proportion and area of community and indigenous managed forests and tree-based production systems.
	SP23. Promote and apply mechanisms for germplasm exchange at regional level to support research and development activities, in agreement with international conventions	R	1- Regional regulations and mechanism for forest reproductive material exchange in place. 2- Trends in number and type of seed lots and quantities of seeds traded/exchanged for research and development.
	SP24. Reinforce regional and international cooperation to support education, knowledge dissemination, research, and conservation and sustainable management of FGR	R, I	Number of active networks (i.e. holding meetings and producing reports at least yearly) supporting education, knowledge dissemination, research, and conservation and sustainable management of FGR.
	SP25. Encourage the establishment of network activities and support development and reinforcement of international networking and information sharing on FGR research, management and conservation	R, I	
	END OF REVIEWED INDICATORS		
	SP26. Promote public and international awareness of the roles and values of FGR	I	1- Number of courses including FGR at national level (D) 2- Trends in inclusion of FGR consideration in global plans of action of international relevant bodies / conventions / initiatives
	SP27. Strengthen efforts to mobilize the necessary resources, including financing, for the conservation, sustainable use and development of FGR	N, R, I	1- Trends in number of funding calls specifically mentioning FGR at national and international levels 2- Trends in level and proportion (in relation to other conservation and use schemes) of funding available for FGR projects at national and international levels 3- Trends and proportion of SPs being implemented at national level

APPENDIX D

ASPECTS OF FOREST GENETIC RESOURCES TO CONSIDER WHEN DEALING WITH ACCESS AND BENEFIT SHARING

- FGR are often undomesticated species and populations.
- Forest species migrate on their own (albeit slowly) and do not recognize borders.
- There is a long history of moving species around the world. Many plantation programs depend on exotic species (e.g. *Pinus*, *Eucalyptus*, *Gmelina*, etc).
- Many of the benefits derived from forests are "ecosystem services" and are difficult to value. Unlike production crops, it is difficult to put a monetary value on what may come from a breeding or restoration program.
- The benefits derived from tree breeding take decades to realize. Breeding intervals range from 10 to 15 years, plantation ages can range from 8 to 40 years. A temperate forest tree breeding program would need close to 35 years to see any real economic value from a material transfer (maybe less if the seed could be sold for increased value, but the economic benefit of the seed would be minimal).
- Unlike agricultural crops, a forest does not need a new crop every year; there is no large market for seed sales as is the case for corn, beans, rice, etc.
- Disease resistance is a key trait for which exotic germplasm is often needed. Aspects to consider:
    - Sometimes the benefits are simply establishment of a healthy forest, with no plans for harvest in some cases;
    - Often the disease for which resistance is sought through breeding programmes originates from the same region of the germplasm (i.e., the problem originated from the source of the resistance).

APPENDIX E

MEMBERS OF THE INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON FOREST GENETIC RESOURCES ELECTED AT THE FOURTEENTH REGULAR SESSION OF THE COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Composition (no. of countries per region)	*Country*
Africa **(5)**	Algeria Congo Ethiopia Madagascar Mali
Asia **(5)**	China Indonesia Lao People's Democratic Republic Republic of Korea Viet Nam
Europe **(5)**	Finland France Norway Poland Russian Federation
Latin America and the Caribbean **(5)**	Brazil Chile Cuba Ecuador Trinidad and Tobago
Near East **(3)**	Iran (Islamic Republic of) Lebanon Sudan
North America **(2)**	Canada United States of America
Southwest Pacific **(2)**	Papua New Guinea Vanuatu

APPENDIX F

LIST OF DOCUMENTS

Working documents

CGRFA/WG-FGR-3/14/1	Provisional agenda and timetable
CGRFA/WG-FGR-3/14/1 Add.1	Provisional annotated agenda and timetable
CGRFA/WG-FGR-3/14/2	Follow up to the *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*
CGRFA/WG-FGR-3/14/3	Strategy for the Implementation of the *Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*
CGRFA/WG-FGR-3/14/4	Targets and indicators for forest genetic resources
CGRFA/WG-FGR-3/14/5-Rev.1	Genetic diversity and climate change
CGRFA/WG-FGR-3/14/6	Biodiversity and nutrition
CGRFA/WG-FGR-3/14/7	Application and integration of biotechnologies for the conservation and sustainable utilization of genetic resources for food and agriculture
CGRFA/WG-FGR-3/14/8-Rev.1	Access and benefit-sharing and forest genetic resources

Information documents

CGRFA/WG-FGR-3/14/Inf.1	Statutes of the Intergovernmental Technical Working Group on Forest Genetic Resources and Members elected by the Fourteenth Regular Session of the Commission
CGRFA/WG-FGR-3/14/Inf.2-Rev.1	List of documents
CGRFA/WG-FGR-3/14/Inf.3	Synthetic account of *The State of the World's Forest Genetic Resources*
CGRFA/WG-FGR-3/14/Inf.4	Draft guidelines to support the integration of genetic diversity into climate change adaptation planning (NAPs, NAPAs)
CGRFA/WG-FGR-3/14/Inf.5	Government submissions on conditions under which specific genetic resources for food and agriculture are exchanged and utilized

CGRFA/WG-FGR-3/14/Inf.6 Rev.1	Submissions of stakeholders on voluntary codes of conduct, guidelines and best practices and/or standards in relation to access and benefit-Sharing for all subsectors of genetic resources for food and agriculture
CGRFA/WG-FGR-3/14/Inf.7	Explanatory notes to the distinctive features of genetic resources for food and agriculture
CGRFA/WG-FGR-3/14/Inf.8	Participants list