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Eighth Session of the Intergovernmental Technical Working Group on Forest Genetic Resources

Rome, 26–28 November 2024

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

REPORT OF THE EIGHTH SESSION

OF THE

INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON

FOREST GENETIC RESOURCES

Rome, 26–28 November 2024

The documents of the Intergovernmental Technical Working Group on
Forest Genetic Resources
are to be found on the internet at:

<https://www.fao.org/forest-genetic-resources/working-group/en/>

They may also be obtained from:

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I. OPENING OF THE SESSION

1. The Eighth Session of the Intergovernmental Technical Working Group on Forest Genetic Resources (Working Group) was held from 26 to 28 November 2024. The Members and alternates of the Working Group, as elected by the Commission on Genetic Resources for Food and Agriculture (Commission) at its Nineteenth Regular Session, are given in *Appendix B*. The list of delegates and observers is available on the FAO website.¹
2. Ms Mari Rusanen (Finland), Chairperson of the Seventh Session of the Working Group, opened the session and welcomed delegates and observers.
3. Mr Zhimin Wu, Director, Forestry Division of FAO, welcomed delegates and observers. He noted that forests, covering one-third of the world's land area, are vital for the fight against climate change, biodiversity loss, land degradation, hunger and poverty. He stressed that trees and other woody plants are the foundation of forest ecosystems and people use them for multiple purposes. He informed the Working Group that FAO has developed the Forestry Roadmap: *From Vision to Action 2024–2031*,² endorsed by Members at the 27th Session of the FAO Committee on Forestry, which took place in Rome in July 2024, aimed at guiding the work on forestry and addressing major global challenges. He further noted that the proofing version of *The Second Report on the State of the World's Forest Genetic Resources* (Second Report) is now in its final stages of preparation and provides many examples of how the conservation, use and development of these resources have contributed to the efforts of countries towards sustainable development, including sustainable forest management.
4. Mr Dan Leskien, Senior Liaison Officer of the Commission, welcomed delegates and observers. He noted that forest genetic diversity is key for forest trees to survive, adapt and evolve under changing environmental conditions. He recalled that the report on *The State of the World's Forest Genetic Resources*, launched in 2014, has formed a building block for the activities of the Commission on forest genetic resources (FGR). He further noted that the proofing, close-to-final version of the Second Report is another milestone for FAO's work and that of FAO Members on FGR. He also noted that the session provides the Working Group with an opportunity to revise the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources (Global Plan of Action), which will not only increase the visibility of FGR and the awareness of their importance, but also re-shape the global governance of FGR and stress their role in the global biodiversity, climate change and development agendas.
5. The Working Group adopted the Agenda, as given in *Appendix A*.

II. ELECTION OF CHAIRPERSON, VICE-CHAIRPERSONS AND RAPPORTEUR

6. In line with Article III of its Statutes, the Working Group, in consultation with the regions, replaced absent Members of the Working Group with other Members of the Commission present at the session. China, Côte D'Ivoire and Indonesia therefore attended the session as Members of the Working Group.
7. The Working Group elected Ms Valderês Aparecida de Sousa (Brazil) as Chair. The Working Group elected Mr Anicet Ngomin (Cameroon), Mr H.S. Ginwal (India), Mr Khosro Sagheb Talebi (Iran (Islamic Republic of)), Ms Joukje Buiteveld (Netherlands (Kingdom of the)), Ms Toral Patel Weynand (United States of America) and Mr Godfrey Bome (Vanuatu) as Vice-Chairs. Ms Patel Weynand) was elected *Rapporteur*.

¹<http://www.fao.org/forest-genetic-resources/working-group/en/>

² COFO/2024/5.1.

III. FINALIZATION OF THE SECOND REPORT ON THE STATE OF THE WORLD'S FOREST GENETIC RESOURCES

8. The Working Group considered the document *Finalization of The Second Report on the State of the World's Forest Genetic Resources*.³ It took note of the document *The Second Report on the State of the World's Forest Genetic Resources – Proofing version*.⁴

9. The Working Group took note of the Second Report and recommended that the Commission welcome the Second Report and take note of its findings. Furthermore, it invited FAO to widely disseminate the Second Report and its in-brief version. Based on this, the Working Group noted that the Secretariat will also develop an interactive digital version of the report containing the key findings.

10. The Working Group invited FAO to increase international awareness of the importance of FGR by bringing the Second Report to the attention of governments and relevant stakeholders. It further recommended that FAO gather from National Focal Points, regional networks on FGR and relevant international organizations suggestions for the improvement of the reporting process for future global assessments on FGR and present options to the next session of the Working Group for its consideration. It also encouraged FAO to support national consultations on FGR for the preparation of future global assessments.

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

11. The Working Group considered the document *Implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*.⁵

12. The Working Group took note of the activities undertaken in support of the implementation of the Global Plan of Action. It recommended that FAO finalize, maintain and develop the global information system on FGR for monitoring the implementation of the Global Plan of Action.

13. The Working group further recommended that the Commission encourage countries that have not yet done so to provide their data for inclusion in the global information system on FGR to facilitate monitoring of the implementation of the Global Plan of Action.

14. In addition, it recommended that the Commission invite countries to include actions on FGR, as appropriate, into their Country Programming Frameworks and remind them of the possibility of requesting support from FAO through its Technical Cooperation Programme for the implementation of the Global Plan of Action.

15. The Working Group recommended that the Commission invite countries to integrate actions on FGR, as appropriate, into project proposals prepared for multilateral financing mechanisms to enhance sustainable forest management, including conservation and use of forest biodiversity, and forest-based adaptation and mitigation measures for climate change.

16. The Working Group recommended that FAO continue supporting the National Focal Points in their efforts to report FGR data and that FAO promote the use of the information system on FGR for developing new initiatives at national, regional and international levels. Furthermore, it recommended that FAO continue supporting the implementation of the Global Plan of Action and clarify how it can support countries in its implementation.

17. The Working Group further recommended that the Commission encourage donors support the implementation of the Global Plan of Action on a voluntary basis.

18. The Working Group also recommended that the Commission encourage awareness-raising programmes in countries to promote the implementation of measures for FGR through national frameworks.

³ CGRFA/WG-FGR-8/24/3.

⁴ CGRFA/WG-FGR-8/24/3/Inf.1.

⁵ CGRFA/WG-FGR-8/24/4.

V. REVIEW OF THE *GLOBAL PLAN OF ACTION FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF FOREST GENETIC RESOURCES*

19. The Working Group considered the document *Review of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*⁶ and the *Results of the written consultation on the review of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*.⁷
20. The Working Group reviewed and revised the Global Plan of Action as contained in *Appendix C*. It recommended that the Commission invite the Director-General to bring the revised Global Plan of Action to the attention of the FAO Conference for its consideration and adoption.
21. The Working Group recommended that the Secretariat update the introduction of the Global Plan of Action (Part I), the introductions of its Priority Areas and the Summary Table, as necessary.
22. The Working Group reviewed the draft Resolution as contained in *Appendix D* and recommended that the Commission consider it at its next session and invite the Director-General to bring it to the attention of the FAO Conference, for its consideration and adoption.

VI. CLIMATE CHANGE AND FOREST GENETIC RESOURCES

23. The Working Group considered the document *Climate change and genetic resources for food and agriculture*⁸ and took note of the information documents *Draft baseline report on genetic resources for food and agriculture and climate change*⁹ and *FAO's work on climate change*.¹⁰
24. The Working Group recommended that the Commission invite Members to make use of the FAO tools and guidance on climate change adaptation and mitigation when developing or updating their National Adaptation Plans (NAPs) and Nationally Determined Contributions (NDCs).
25. In taking note of the draft baseline report, it urged National Focal Points to the Commission that have not yet done so to complete the questionnaire. It recommended that the Commission reconsider its decision to circulate the questionnaire to only National Focal Points to the Commission. It also recommended that the draft baseline report be revised in the light of further submissions.
26. The Working Group recommended that the global multistakeholder workshop on climate change and GRFA be convened before the Twenty-first Regular Session of the Commission to exchange information and experiences, share views and priorities, and discuss possible changes to the Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning (Voluntary Guidelines),¹¹ taking into account the findings of the baseline report. It further recommended that FAO explore gathering information on FGR at this workshop.
27. It further recommended that the Voluntary Guidelines be revised in light of the baseline report and the outcome of the workshop, taking into account the need to avoid duplication of efforts of other fora and instruments, for consideration in regional consultations and subsequently by the Working Groups and the Commission.

⁶ CGRFA/WG-FGR-8/24/5.

⁷ CGRFA/WG-FGR-8/24/5/Inf.1.

⁸ CGRFA/WG-FGR-8/24/6.

⁹ CGRFA/WG-FGR-8/24/6/Inf.1.

¹⁰ CGRFA/WG-FGR-8/24/6/Inf.2.

¹¹ FAO. 2015. *Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning*. Rome. <https://openknowledge.fao.org/handle/20.500.14283/i4940e>

VII. OPTIONS FOR THE IDENTIFICATION OF NEW AND EMERGING ISSUES

28. The Working Group considered the document *Options for the identification of new and emerging issues*.¹² The Working Group recommended that the Commission, at its forthcoming session, consider the adoption of a new procedure for the ad hoc identification of new and emerging issues.

VIII. CLOSING STATEMENTS

29. Mr Thomas Hofer, Senior Forestry Officer, Forestry Division, congratulated the Working Group on its accomplishments. He noted that the guidance provided by the Working Group is essential to continue implementing the Global Plan of Action. He emphasized that the Forestry Division is looking forward to disseminating the findings of the Second Report, while supporting countries in their efforts to safeguard FGR and implement sustainable forest management. He also re-iterated the commitment of the Forestry Division to provide technical support for the implementation of the Global Plan of Action and continue collaborating with the National Focal Points, the regional networks on forest genetic resources and international partners.

30. The Chairperson thanked all delegates and the *Rapporteur* for their contributions to the success of the session. She also thanked the Secretariat on behalf of the Working Group, along with the interpreters, translators and other staff.

¹² CGRFA/WG-FGR-8/24/7.

APPENDIX A**AGENDA OF THE EIGHTH SESSION OF THE INTERGOVERNMENTAL TECHNICAL
WORKING GROUP ON FOREST GENETIC RESOURCES**

1. Election of Chairperson, Vice-Chairperson(s) and *Rapporteur*
2. Adoption of the agenda and timetable
3. Finalization of *The Second Report on the State of the World's Forest Genetic Resources*
4. Implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources
5. Review of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources
6. Climate change and forest genetic resources
7. Options for the identification of new and emerging issues
8. Any other matters
9. Adoption of the Report

APPENDIX B

**MEMBERS AND ALTERNATES OF THE INTERGOVERNMENTAL TECHNICAL
WORKING GROUP ON FOREST GENETIC RESOURCES, ELECTED BY THE
COMMISSION AT ITS NINETEENTH REGULAR SESSION**

<i>Composition (no. of countries per region)</i>	<i>Country</i>
Africa (5)	Cameroon Democratic Republic of the Congo Namibia Senegal Uganda <i>First Alternate:</i> Nigeria <i>Second Alternate:</i> Mali
Asia (5)	Bangladesh India Japan Malaysia Republic of Korea <i>First Alternate:</i> Indonesia <i>Second Alternate:</i> Bhutan
Europe (5)	Finland Germany Italy Netherlands (Kingdom of the) Poland <i>First Alternate:</i> Spain <i>Second Alternate:</i> Norway
Latin America and the Caribbean (5)	Argentina Brazil Cuba Ecuador Peru <i>First Alternate:</i> Costa Rica <i>Second Alternate:</i> Panama
Near East (4)	Jordan Iran (Islamic Republic of) Iraq Lebanon <i>First Alternate:</i> Syrian Arab Republic <i>Second Alternate:</i> Yemen
North America (2)	Canada United States of America
Southwest Pacific (2)	Papua New Guinea Vanuatu <i>First Alternate:</i> Solomon Islands <i>Second Alternate:</i> Samoa

APPENDIX C

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

**a) Improving the availability of, and access to information on forest genetic resources
(Priority Area 1)**

NATIONAL LEVEL
Strategic Priority 1: Establish and strengthen national FGR assessment, characterization and monitoring systems
<p>Rationale: Information on FGR is inadequate in many countries. National forest inventories do not usually include the parameters needed for planning the sustainable management of FGR. Baseline information on the status, trends and characteristics of FGR is needed in order to allow the definition and regular review of priorities for sustainable use and conservation, as well as the development of tree domestication and improvement programmes.</p> <p>Action: Promote species inventory and characterization. Promote mapping of the distribution of priority or important species populations. Reinforce the capacities of national herbaria and botanic surveys to support the development of knowledge on forest species.</p> <p>Develop technical standards, protocols and information systems for assessing, and monitoring the status of FGR management. Promote and support the development of national and regional species checklists and mechanisms for updating them regularly.</p> <p>Develop networks of forest genebanks, information units and databases, and enhance information management and sharing at national and international levels.</p>
Strategic Priority 2: Develop national and subnational systems for the assessment and management of traditional knowledge on FGR
<p>Rationale: Traditional knowledge can make a significant contribution to sustainable development through practices such as local conservation and sustainable use of plants and can contribute to efforts to solve serious global problems such as climate change, desertification, and land and water degradation. There is therefore a need to preserve traditional knowledge of FGR by developing national assessments and improving documentation.</p> <p>Action: Promote national-level assessments and documentation of traditional knowledge related to the use and management of FGR with the free, prior and informed consent of Indigenous Peoples as well as local communities.</p> <p>Develop and strengthen national and subnational traditional knowledge registration mechanisms and databases to preserve, protect and promote traditional knowledge on FGR. Encourage the use of standardized protocols for the collection of traditional knowledge.</p> <p>As appropriate, develop guidance on registering, accessing, storing and using traditional knowledge of FGR at national, subnational and local scales, with effective participation of Indigenous Peoples as well as local communities, taking into consideration similar initiatives under the CBD.</p>

INTERNATIONAL LEVEL
Strategic Priority 3: Develop international technical standards and protocols for FGR inventories, characterization and monitoring of trends and risks
<p>Rationale: Scientifically sound, realistic and policy-relevant indicators for defining a baseline and monitoring the status and trends of FGR and their management are lacking at global, regional and national levels. There is a need to develop and use standardized methods and protocols for inventory, characterization and monitoring. There is also a need to enhance the coordination of research on the identification, mapping and characterization of species populations and to improve the impact of the results on FGR management policies.</p> <p>Action: Develop global criteria and indicators for assessing the status and trends of FGR within national forest inventories and other forest-related programmes.</p> <p>Develop protocols for participatory assessment and monitoring of FGR.</p>
Strategic Priority 4: 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
<p>Rationale: Building on the First Report, <i>The Second Report on the State of the World's Forest Genetic Resources</i> provides a global overview of the diversity, status and trends of FGR and of national, regional and global capacity to manage these resources. Many country reports indicate that there are important gaps in knowledge of FGR and that information at country level is scattered and difficult to access. Furthermore, research programmes suffer from a lack of adequate financial support, especially in developing countries. There is therefore an urgent need to improve access to information on FGR for all stakeholders, while also developing the knowledge base required for sustainable use and management of FGR. There is also a need to improve countries' financial support to research activities.</p> <p>Action: Improve access to information by developing and strengthening information management and sharing mechanisms at national, regional and global levels. The information should be collected following the CARE¹³ principles as they apply to indigenous or traditional knowledge and FAIR principles,¹⁴ as appropriate.</p> <p>Promote the establishment, maintenance and regular updating of FGR databases and information systems at local, subnational, national, regional and global levels. Promote collaboration between researchers, Indigenous Peoples as well as local communities, and governmental institutions to collect, validate and update data. Strengthen technical capacity for information system management.</p> <p>Improve access to information on forest species for a wide range of stakeholders, including Indigenous Peoples as well as local communities.</p>

b) *In situ* and *ex situ* conservation of forest genetic resource (Priority Area 2)

NATIONAL LEVEL
Strategic Priority 5: Strengthen the contribution of primary forests and protected areas to <i>in situ</i> conservation of FGR
<p>Rationale: In the current context of increasing pressure on forest land and forest resources, primary forests and protected areas remain refuges for threatened FGR. A substantial proportion of wild and/</p>

¹³ Collective benefit, Authority to control, Responsibility and Ethics.

¹⁴ Findable, Accessible, Interoperable, and Reusable.

or endemic plants occur only in primary forests and protected forest areas. Only in those forests is the natural population genetic structure conserved. Natural processes involved in the dynamics of FGR resources are better assessed and understood in protected natural forests, which remain the best laboratories for studying species' ecology and biology. The contributions of primary forests and protected areas to the development of knowledge on plant species and to the conservation of FGR, therefore, need to be promoted.

Action: Develop collaboration between institutions or programmes in charge of protected forest areas and those responsible for the development and use of FGR, such as national forest tree breeding centres, forest tree seed centres and other forest germplasm collection and conservation institutions operating at national or regional levels.

Promote and reinforce the development of national FGR assessment and conservation activities in primary forests and protected areas and in conservation forests, with the participation of Indigenous Peoples as well as local communities, as appropriate.

Manage genetic reserves within protected areas to maintain the evolutionary potentials of targeted species.

Strategic Priority 6: Promote the establishment and development of efficient and sustainable *ex situ* conservation systems, including *in vivo* collections and genebanks

Rationale: A comprehensive FGR conservation programme requires some combination of *in situ* and *ex situ* conservation. *Ex situ* conservation of FGR is mainly concerned with sampling as much as possible of the genetic variation that resides within and among populations of the target species. *Ex situ* conservation is, in many cases, the only option available for conserving the intraspecific genetic variation present in peripheral or isolated populations¹⁵ that are seriously threatened by changes in land use and environmental conditions (drought, flooding, salinity, etc.). The main objectives of an *ex situ* conservation programme for any particular species are:

- to serve as a backup measure should *in situ* conservation measures be unworkable or unavailable;
- to ensure that a wide range of the diversity available in the species is conserved; and
- to manage the regeneration of the species outside its original natural range (provenance) in a more controlled way, with specific objectives for conservation or use.

Action: Promote the documentation, characterization, regeneration and evaluation of FGR germplasm.

Collect seeds that are representative of natural variation.

Establish collections of improved seeds.

Promote the use of post-harvesting procedures, technology and infrastructure that maintain the quality of the seed before and after *ex situ* conservation.

Promote the awareness, establishment and maintenance of national, subregional and regional genebanks for FGR, as well as specialized nurseries and botanical gardens. Encourage collaboration between research institutes, governments, Indigenous Peoples as well as local communities and international organizations for the management and monitoring of collections.

Promote and support the FGR conservation initiatives of Indigenous Peoples as well as local communities.

¹⁵ FAO, FLD & IPGRI, 2004. *Forest genetic resources conservation and management. Vol. 3: In plantations and genebanks (ex situ)*. Rome.

Promote and develop mechanisms for the involvement of the private sector in the conservation of FGR.

Foster studies on seed collection, quality, conservation and reproduction.

Promote and encourage research on the conservation of recalcitrant-seed species.

Promote the establishment of incentives for *ex situ* conservation.

Strategic Priority 7: Support assessment, management and conservation of marginal and/or range limits forest species populations

Rationale: Marginal populations are fragile and more inclined to degradation than central populations, because they normally have less variation. Evolutionary forces can have particular effects on marginal populations and may lead to specific adaptations. Marginal populations should therefore have high priority in global and regional conservation strategies and programmes.

Action: Develop guidelines for the inventory and documentation of marginal forest species populations and promote their management and conservation through their integration into conservation networks and by emphasizing the participation of local communities.

Encourage comprehensive field and remote-sensing studies to identify and document marginal and/or range limits populations. Encourage the establishment of long-term monitoring systems to track population trends and risks.

Support and/or promote, as appropriate programme development and collaboration at global and regional levels to assess marginal populations and promote their conservation and evaluation in both *in situ* and *ex situ* conditions.

Promote habitat connectivity, including through ecological corridors, for the conservation of marginal and/or range limits populations.

Strategic Priority 8: Support and develop sustainable management and conservation of FGR on farmland

Rationale: Farmers contribute to FGR management and conservation on-farm in traditional land-use systems such as agroforestry systems. They therefore influence the interspecific and intraspecific diversity of species in the landscape. FGR managed in traditional agroforestry systems are seriously threatened by a lack of regeneration resulting from the increasing pressure on forest resources and current trends in agricultural intensification. There is a need to address the issue of on-farm management of FGR in countries where agroforestry is a common practice.

Action: Develop methodological tools for on-farm management and conservation of important agroforestry species.

Assess the status of conservation and management of important agroforestry species at national and regional levels.

Provide technical support to promote on-farm sustainable management and use of FGR, including through partnerships between the agricultural and forestry sectors.

Evaluate and improve traditional agroforestry systems that integrate agroforestry and FGR conservation and use.

Raise awareness among farmers on the benefits of on-farm sustainable management, conservation and use of FGR.

Strategic Priority 9: Support and strengthen the role of forests managed by Indigenous Peoples as well as local communities in the sustainable management and conservation of FGR

Rationale: Forests managed by or in collaboration with Indigenous Peoples as well as local communities often have a strong role in maintaining genetic resources. Forest management by Indigenous Peoples as well as local communities has been shown to be one of the most effective means of combining conservation with wealth creation. There is a need for greater recognition and support for this role in countries where this type of management is relevant.

Action: Assess the status of conservation and management of FGR in forests managed by Indigenous Peoples as well as local communities.

Provide technical support and capacity building for the sustainable management and conservation of FGR in forests managed by Indigenous Peoples as well as local communities.

Encourage the development of and provide financial resources on a voluntary basis for FGR conservation led and managed by Indigenous Peoples as well as local communities.

Strategic Priorities 10: Identify priority species for action

Rationale: Because of the complexity of the subject, FGR management is better handled using a species approach. Processes involved in genetic diversity dynamics determine species adaptation and performance in a given environment. Understanding and developing FGR using a species approach is regarded as a useful option. Given the high number of forest species present in each country, it is impossible to develop research activities or programmes for all forest species. Priority species should be identified at national and subnational levels, and these priorities should be shared in existing regional and international fora so as to provide better focus and more efficient resource use.

Action: Promote research networks focusing on important species at national, regional and international levels.

Update priority species lists regularly at both country and regional levels.

Provide international support for the development of guidelines for species prioritization and for the identification of priority areas of research.

The prioritization of species could focus on species, populations or varieties that have reduced populations and are in danger of extinction, or on species of diverse current and future value, including those of strategic, scientific and economic importance. The values of these species, populations, breeds or varieties could be linked to socioeconomic, gender, food security or climate change adaptation factors, or to sacred or cultural significance at local, national and international levels.

REGIONAL LEVEL

Strategic Priority 11: Develop and implement regional *in situ* conservation strategies and promote ecoregional networking and collaboration

Rationale: The ecosystem approach is a way to manage entire ecosystems in a holistic manner without excluding other management and conservation approaches such as area-based management tools and single-species conservation practices. Ideally, all these approaches should be integrated, through regional networks when appropriate.

Regional strategies for conservation of FGR, including regional networks of *in situ* genetic conservation units and corridors of priority species, are needed in order to ensure the dynamic conservation of key FGR and their evolutionary abilities for the future. Definition and implementation of regional conservation strategies provide a good justification for coordination and collaboration at regional level. Investment in joint activities at regional level may often be more efficient and cost-effective than the multiplication and duplication of activities at national level.

Action: Identify gaps in the existing conservation efforts with a view to addressing them, where appropriate.

Promote research programmes that address regional knowledge gaps in the conservation and use of FGR.

Develop methodologies for the preparation of regional strategies for conservation of FGR, including principles for their implementation, taking into account existing experiences and using existing regional networks relevant to FGR.

Promote ecosystem-based partnerships and regional collaboration to develop species genetic resources conservation and evaluation programmes (*in situ* and *ex situ*) in line with commitments under existing international regulations.

Mobilize resources by involving existing regional economic and environmental organizations.

c) Sustainable use, development and management of forest genetic resources (Priority Area 3)

NATIONAL LEVEL

Strategic Priority 12: 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

Rationale: Countries reported that large plantations are being established to serve many purposes, including the production of timber biofuel and fibres, and the provision of various environmental services such as reclamation of degraded land and soil and water management. However, most developing countries lack adequate forest seed supply systems. This jeopardizes the success and performance of plantation programmes in these countries. This concern is highlighted in most countries' reports and was identified as a priority area for action by most regional consultations.

Action: Promote the establishment and support of national tree seed systems, including tree seed centres and related programmes, where appropriate.

Enhance **collaboration** between tree seed centres, and **develop common quality seed standards**, to facilitate the exchange of forest reproductive material within regions and support national afforestation programmes.

Strategic Priority 13: Promote restoration and rehabilitation of ecosystems using genetically appropriate material

Rationale: Millions of square kilometres of degraded and disturbed forest land are attracting attention from many national and international organizations and agencies as potential sites for restoration or rehabilitation, but little attention is typically paid to the importance of selecting appropriate genetic sources to produce planting material. The challenge of matching adapted populations to current and future environmental conditions is often complicated by the extent and

the type of degradation and disturbance involved, which may require field testing and/or predictive modelling.

Action: Support and conduct research to identify key variables for choosing populations that are well-matched to current and future conditions at degraded sites.

Support and equip research centres and nurseries with adequate infrastructure, where appropriate, to conduct studies aimed at identifying genetically appropriate material for restoration and rehabilitation of forest ecosystems.

Develop guidelines and decision-support tools for selecting appropriate genetic composition of planting materials.

Develop protocols, where appropriate, for the restoration and rehabilitation of ecosystems that ensure the use of appropriate genetic material.

Develop and implement monitoring protocols to assess the viability and resilience of tree populations over time at rehabilitated sites.

Strategic Priority 14: Support climate change adaptation and mitigation through proper management and use of FGR

Rationale: The current growing concern about climate change and its effects on ecosystems and the performance of forest-related production systems challenges stakeholders in FGR management to better understand forest species and mechanisms for adaptation to current and future climate changes. Genetic diversity is needed in order to ensure that species can adapt, as well as to allow for artificial selection and breeding to improve productivity. Thus, genetic diversity, including diversity among species, is the key to the resilience of forest ecosystems and the adaptation of forest species to climate change.

Action: Develop subnational, national and regional standard methods and guidelines for the identification, selection and use of species population conservation units, based on environmental and sociocultural factors, which are the main determinants of the status of forest and agroforestry ecosystem diversity.

Assist countries in their efforts to improve the conservation and sustainable use of FGR in the face of climate change by:

- promoting best practices in FGR management, specifically in the fields of conservation, exploration, testing, breeding and sustainable use; and
- promoting FGR's contributions to environmental sustainability through the development and use of well-suited genetic material.

Strategic Priority 15: Promote appropriate use of new and emerging technology to support the conservation, development and sustainable use of FGR

Rationale: Tree improvement activities remain limited to a few economically important tree species, not only because of financial constraints but also because of trees' specific characteristics. Trees are long-lived perennial species, with long regeneration cycles and late sexual maturity. Because of these characteristics, improvement and breeding research in tree species require more time than is required for the equivalent activities in other crops. New technologies, as appropriate, such as genomics and micro-propagation, can help accelerate the selection process and unlock the huge potential of forest trees. These new technologies have proved to be useful for understanding forest ecosystem dynamics, including genetic processes. They can orientate appropriate practical measures for sustainable conservation, management, restoration and rehabilitation.

Action: Promote the use of emerging technology to support the conservation and sustainable use of FGR, as well as tree improvement programmes, and to enhance the use of quality FGR in forestry programmes.

Assess available technologies and their effectiveness for use in *in situ* and *ex situ* conservation and in the development of the genetic resources of priority species.

Strategic Priority 16: Develop and reinforce research programmes on tree breeding, domestication and bioprospection in order to maximize the benefits of FGR

Rationale: In addition to timber, forests provide many other commodities that are important to local communities and to national economies. The importance of medicinal plants, fodder plants and food plants is increasingly recognized and strongly reflected in many country reports. In many developing countries, a large proportion of the population makes use of medicinal plants for health care. Free grazing is still a common practice in many developing countries, and forests are often an essential source of fodder. These various resources are still harvested from wild plants in forest lands and in some cases are under threat due to over-exploitation. Domestication of such plants will improve the supply of the targeted products while reducing the vulnerability of their genetic resources.

Action: Assess and evaluate the contributions of forest species to environmental services (soil and water conservation, carbon sequestration, etc.).

Assess and evaluate the contributions of priority forest species to important national production sectors (timber, fruits, fodder, vegetable oil, vegetables, medicines, etc.).

Develop programme-based multipurpose tree breeding for priority species. Promote participatory approaches by involving local communities in selection and breeding programmes for priority species, based on farmers' desired traits.

Support collaborative research projects between academic institutions, research centres, industrial partners and Indigenous Peoples as well as local communities, where appropriate.

INTERNATIONAL LEVEL

Strategic Priority 17: Develop and promote networking and collaboration among concerned countries to combat invasive species (animals, plants and microorganisms) as well as diseases and pests affecting FGR

Rationale: Invasive species are increasingly being noted as major threats to FGR. The major threats come from plant species that have the capacity to invade natural and/or slightly disturbed forest associations and become predominant, often displacing whole ecosystems and species. Pests and diseases affecting forests and trees are predicted to become an increasing threat as the effects of climate change become more prominent and the movement of plant material across countries and continents accelerates.

Action: Review existing standards and protocols, where appropriate, and, when needed, propose voluntary protocols for the movement of forest plant material across countries and regions, to avoid the spread of invasive organisms.

Promote national assessments of invasive alien species and their effects on FGR, using a regional or ecosystem approach.

Work with the International Plant Protection Convention to include FGR in existing biosecurity regulations and integrate concerns about FGR.

Promote the development of research on pests and diseases that affect FGR.

d) Policies, institutions and capacity building (Priority Area 4)

NATIONAL LEVEL

Strategic Priority 18: Develop national strategies for *in situ* and *ex situ* conservation of FGR and their sustainable use

Rationale: Countries often lack adequate policies and programmes addressing *in situ* and *ex situ* conservation of FGR. Given the large number of stakeholders involved in many ways in the use, development and management of FGR at national level, it is useful to develop national strategies and programmes that provide an appropriate framework for action.

Action: Develop policy tools, where appropriate, to provide national frameworks for action for the sustainable *in situ* and *ex situ* conservation of FGR.

Develop or strengthen institutional capacities with respect to *in situ* and *ex situ* conservation of FGR to enable the implementation of existing or future national strategies for the conservation of FGR, including genebanks and *in vivo* collections.

Strategic Priority 19: Update FGR conservation and management needs and integrate them into wider policies, programmes and frameworks of action at national, regional and global levels

Rationale: Many countries reported that due to the scarcity of financial and human resources, FGR may be best managed if relevant needs and priorities are addressed through wider national forestry and land-use programmes and policies, in line with relevant international strategic documents of the United Nations-

Action: Promote the review of national policy and legal frameworks on forests and the integration into them of key concerns related to FGR.

Review and align forest and land-use policies and programmes, where appropriate, to better integrate the FGR dimension and contribute to climate change mitigation and adaptation.

Promote the integration of FGR into National Biodiversity Strategies and Action Plans (NBSAPs) and National Adaptation Plans (NAPs).

Amend national biosecurity regulations, where appropriate, to integrate concerns about FGR.

Strategic Priority 20: Develop collaboration and promote coordination of national institutions and programmes related to FGR

Rationale: There is a need to build synergy at national level between coordination units and national focal points of the various international programmes and conventions to enable efficient information sharing and resource use and to provide better support to efforts to address national priorities for FGR.

Action: Enhance cooperation and synergies between national authorities and national focal points in charge of FGR-related international programmes and conventions (e.g. CBD, United Nations Convention to Combat Desertification, climate change, access and benefit-sharing, Global Forest Resources Assessment, national forest programmes).

Create national consultation frameworks, such as permanent national commissions for FGR, to enhance sustainable management of FGR within national development and research programmes.

Strategic Priority 21: Establish and strengthen educational and research capacities on FGR to ensure adequate technical support to related development programmes

Rationale: Many countries reported that technical and scientific capacities on FGR are weak. University curricula on issues such as FGR conservation, tree breeding and management of non-wood forest products are rare in many countries. Research and education need to be strengthened in all areas of FGR management in most countries, in particular in developing countries and countries in economic transition. Establishing, strengthening and maintaining research and educational institutions is a key factor in the development of national capacities to plan and implement priority activities in the sustainable use, development and conservation of FGR.

Action: Develop appropriate training modules to support the management and use of the genetic resources of forest plants that are important sources of wood and non-wood forest products.

Develop inter-sector and inter-institutional collaboration to make use of available scientific and technical information to ensure that the content of training modules is appropriate.

Organize training workshops on recent technological developments, as well as exposure visits for scientists and technicians and training courses for decision-makers and forest managers.

Strengthen national research and education programmes and capacity on FGR and promote regional connectivity and collaboration between institutions.

Reinforce the capacity and operation of national herbaria to support the development of knowledge on forest species.

Develop and improve accessibility to training modules or curricula that address FGR management. This could lead to: 1) the identification of medium- and long-term needs for qualified human resources to support national development and research activities on FGR; 2) the development of extension and education modules with special emphasis on modern technology (e.g. biotechnology), to support national education capacity on forestry and FGR management.

Strengthen research centres focused on FGR and its conservation, with advanced technology and adequate infrastructure to support educational and research efforts, where appropriate.

Strategic Priority 22: Promote the participation of Indigenous Peoples as well as local communities in FGR management in the context of decentralization

Rationale: Many developing countries have a decentralized country administration or are undergoing a decentralization process. In such countries, natural resources management, including FGR management, should take this context into consideration. In some cases, regulation measures are decided at province or state level. In countries where this is the case, there is a need to provide appropriate technical support to decentralized administrations in order to enable them to review or develop policy tools that ensure sustainable use and management of FGR, including protection, preservation and sustainable use of FGR for maintaining customary use by indigenous and local communities.

Action: Develop, strengthen or review local policies related to the management of forests, to increase awareness of FGR among Indigenous Peoples as well as local communities and to properly address the need for sustainable management, development and use of FGR at decentralized level.

Develop adequate human resources to support the proper management of FGR within ongoing decentralization processes and to enhance the contribution of FGR to local development.

REGIONAL LEVEL
Strategic Priority 23: Promote and apply mechanisms for germplasm exchange at regional level to support research and development activities, in agreement with international conventions
<p>Rationale: Transfer and exchange of forest genetic material are regulated under international agreements, which, in some cases, can limit access to proper material and subsequently prevent research programmes from delivering results that are likely to have a real impact.</p> <p>Action: Improve member countries' awareness and understanding of existing international regulations on genetic material exchange.</p> <p>In compliance with national legislation and international regulations, improve or develop adapted national and regional exchange regulations that ensure that records are kept of the source and transfer of forest genetic material for research purposes, and promote mechanisms to facilitate access to material for scientific work within the region.</p> <p>Strengthen and encourage regional collaboration to facilitate the exchange of forest genetic resources, data and information on FGR, and the sharing of benefits derived from them.</p>
Strategic Priority 24: Reinforce regional and international cooperation to support education, knowledge dissemination, research, and conservation and sustainable management of FGR
<p>Rationale: One of the most common constraints to research activities on FGR is a lack of adequate financial and human resources. Member countries therefore recommend strengthening international and regional cooperation to better support education and research activities on the conservation and sustainable management of FGR.</p> <p>Action: Promote the establishment or strengthening of networks and partnerships – including between countries, non-governmental organizations and research institutions – that share information, experiences, best practices and theoretical and practical knowledge on FGR and their management.</p> <p>Identify international channels for financial support (e.g. climate-related funds).</p>
INTERNATIONAL LEVEL
Strategic Priority 25: Encourage the establishment of network activities and support the development and reinforcement of international networking and information sharing on FGR research, management and conservation
<p>Rationale: Most regional consultation workshops identified networking as a priority for action that would improve information and experience sharing among stakeholders at global level</p> <p>Action: Establish better linkages and mechanisms to enhance coordination and collaboration between institutions on technology, policy implementation and the sharing of information and best practices.</p> <p>Support existing international networks that share knowledge on FGR research and conservation.</p>
Strategic Priority 26: Promote public and international awareness of the roles and values of FGR
<p>Rationale: Many countries reported that decision-makers and the general public are not well aware of the importance of FGR. Needs and priorities for action at country, regional and international levels will be better supported by stakeholders if effective awareness-raising activities are developed and supported.</p>

Action: Ensure effective communication and information sharing related to the sustainable management and use of FGR using various approaches, including traditional media, digital platforms, education materials, social networks, documentaries and scientific publications.

Promote international campaigns to raise awareness of the status and trends of FGR and their contribution to the Sustainable Development Goals, including contributions to food security, ecotourism potential, poverty alleviation and environment sustainability, and subsequently seek to develop wide support at government and institutional levels and among the general public, using voluntary mechanisms.

Organize training on FGR for forestry technicians and administration managers.

Strategic Priority 27: Strengthen efforts to mobilize the necessary resources, including financing, for the conservation, sustainable use and development of FGR

Rationale: Most countries reported that the conservation, sustainable use and development of FGR lack adequate funding. Efforts need to be made at national and international levels to ensure that strategic priorities are successfully translated into actions within existing and/or new programmes.

Action: Support countries and stakeholders to design appropriate policies and programmes for the conservation, sustainable use and development of FGR using existing and new voluntary resources, particularly in developing countries and countries with economies in transition.

Encourage countries and stakeholders to explore new funding opportunities, including climate change and biodiversity-related funds. Support the creation of sustainable incentives for conservation and sustainable use activities related to FGR.

APPENDIX D

**REAFFIRMING THE WORLD'S COMMITMENT TO THE GLOBAL PLAN OF ACTION
FOR THE CONSERVATION, SUSTAINABLE USE AND DEVELOPMENT OF FOREST
GENETIC RESOURCES**

Draft Resolution

THE CONFERENCE,

Recalling the adoption of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources (Global Plan of Action)¹⁶ as the key milestone in international efforts to enhance the management of the genetic resources of forest trees and other woody plants species important for forestry, including agroforestry;

Welcoming *The Second Report on the State of the World's Forest Genetic Resources*;

Recognizing the important contributions of forest genetic resources to the 2030 Agenda for Sustainable Development and the United Nations Strategic Plan for Forests 2017–2030, as well as to globally agreed instruments on biodiversity, climate change and desertification;

Affirming that the Global Plan of Action continues to serve as the key policy framework for enhancing the management of forest genetic resources at national, regional and international levels;

Adopts the revised Global Plan of Action, as recommended by the Commission on Genetic Resources for Food and Agriculture;

Invites Members to:

- **develop** or **strengthen** national policies, strategies and action plans, as appropriate, for the management of forest genetic resources;
- **strengthen** their efforts to implement the Global Plan of Action and **report** the progress made to FAO;
- **gather** more comprehensive information on the conservation, use and development of forest genetic resources to advance the management of these resources;
- **pay** due attention to genetic aspects in the management of both natural and planted forests to maintain and enhance their adaptability, productivity and resilience under climate change;
- **integrate** forest genetic resources into relevant national policies and strategies on forests, biodiversity, climate change and desertification;

Requests the Organization to:

- **continue** facilitating and supporting the implementation of the Global Plan of Action and the country reporting process to monitor the progress made in this regard;
- **continue** its efforts to increase international awareness of the Global Plan of Action and the importance of forest genetic resources;
- **promote** the work on forest genetic resources when implementing its corporate strategies on biodiversity mainstreaming and climate change;
- **ensure** that all relevant units of the Organization in headquarters and regional, subregional and country offices are supportive to the implementation of the Global Plan of Action in the context of the FAO Strategic Framework;
- **continue** to pursue extra-budgetary resources to support the implementation of the Global Plan of Action.

Calls on all partners and stakeholders, including donors, to collaborate on the implementation of the Global Plan of Action.

¹⁶ C 2013/REP, paragraph 77.

APPENDIX E

LIST OF DOCUMENTS

Working and information documents

Election of Chairperson, Vice-Chairperson(s) and Rapporteur	CGRFA/WG-FGR-8/24/1
Statutes of the Intergovernmental Technical Working Group on Forest Genetic Resources, and Members and Alternates elected by the Commission at its Nineteenth Regular Session	CGRFA/WG-FGR-8/24/1/Inf.1
Provisional Agenda	CGRFA/WG-FGR-8/24/2
Provisional annotated agenda and timetable	CGRFA/WG-FGR-8/24/2 Add.1
List of documents	CGRFA/WG-FGR-8/24/2/Inf.1
Finalization of <i>The Second Report on the State of the World's Forest Genetic Resources</i>	CGRFA/WG-FGR-8/24/3
<i>The Second Report on the State of the World's Forest Genetic Resources – Proofing version</i>	CGRFA/WG-FGR-8/24/3/Inf.1
Implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources	CGRFA/WG-FGR-8/24/4
Review of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources	CGRFA/WG-FGR-8/24/5
Results of the written consultation on the review of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources	CGRFA/WG-FGR-8/24/5/Inf.1
Climate change and genetic resources for food and agriculture	CGRFA/WG-FGR-8/24/6
Draft baseline report on genetic resources for food and agriculture and climate change	CGRFA/WG-FGR-8/24/6/Inf.1
FAO's work on climate change	CGRFA/WG-FGR-8/24/6/Inf.2
Options for the identification of new and emerging issues	CGRFA/WG-FGR-8/24/7