



Food and Agriculture
Organization of the
United Nations



The International Treaty
ON PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE

Item 16.1 of the Provisional Agenda

NINTH SESSION OF THE GOVERNING BODY

New Delhi, India, 19–24 September 2022

**Report from the Secretariat of the
Commission on Genetic Resources for Food and Agriculture, including
on FAO activities related to the supporting components of the
International Treaty**

Executive Summary

The Secretary of the Commission on Genetic Resources for Food and Agriculture reports regularly to sessions of the International Treaty on the implementation of relevant components of the Commission's Multi-Year Programme of Work, in particular the supporting components of the International Treaty that are under the Commission's aegis, including the reports on *The State of the World's Plant Genetic Resources for Food and Agriculture* and the Global Plans of Action for Plant Genetic Resources for Food and Agriculture.

This report, prepared in close collaboration with the responsible technical divisions/units of FAO, focuses on activities relevant to plant genetic resources for food and agriculture and the supporting components of the International Treaty carried out since the Eighth Session of the Governing Body.

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I. INTRODUCTION

1. According to the *Joint Statement* regarding the cooperation between the International Treaty and the Commission on Genetic Resources for Food and Agriculture (Commission), “the Secretary of the Commission will report regularly to sessions of the International Treaty on the implementation of relevant components of the Commission’s Multi-Year Programme of Work, in particular regarding the supporting components of the International Treaty that are under its aegis, including *The State of the World’s Plant Genetic Resources for Food and Agriculture* and the Global Plan of Action.”¹
2. This report has been prepared in close collaboration with the responsible units of FAO, for information of the Governing Body. It focuses on major outcomes of the Tenth Session of the Commission’s Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group), held from 22 to 24 June 2021 and the Commission’s Eighteenth Regular Session, held from 27 September to 1 October 2021, as well as on activities carried out since the Eighth Session of the Governing Body that are relevant to plant genetic resources for food and agriculture (PGRFA) and the International Treaty. The document also provides an update on the preparation of *The Third Report on the State of the World’s Plant Genetic Resources for Food and Agriculture* (Third Report), as requested by the Ad Hoc Technical Committee on Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture.²
3. Information on developments in the cooperation between the Governing Body and the Commission and ongoing or possible future joint activities in specific areas of common interest is provided in the document, *Cooperation with the Commission on Genetic Resources for Food and Agriculture*.³

II. IMPLEMENTATION BY COUNTRIES OF THE SECOND GLOBAL PLAN OF ACTION FOR PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

4. As stated in Article 14 of the International Treaty, “the rolling Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture is important to this Treaty [and] Contracting Parties should promote its effective implementation, including through national actions and, as appropriate, international cooperation to provide a coherent framework, inter alia, for capacity-building, technology transfer and exchange of information, taking into account the provisions of Article 13.” The Global Plan of Action is a “supporting component” of the International Treaty.
5. In 2011, the FAO Council adopted the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Second GPA), prepared under the aegis of the Commission. The Second GPA updates the Global Plan of Action for the Conservation and Sustainable Use of Plant Genetic Resources for Food and Agriculture and identifies 18 priority activities for the conservation and sustainable use of PGRFA.
6. The implementation of the Second GPA aligns with FAO’s vision of sustainable, inclusive and resilient food systems and with the aspirational ‘four betters’, i.e. better production, better nutrition, a better environment and a better life.⁴ The implementation of the 18 Priority Activities (PAs) of the Second GPA contributes directly to the achievement of the Sustainable

¹ *Joint Statement of Intent for Cooperation between the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture and the Commission on Genetic Resources for Food and Agriculture*, see CGRFA-12/09/Report, *Appendix H*; IT-GB-2/07/Report, *Appendix E*.

² IT/GB-9/22/12.2, paragraph 21.

³ IT/GB-8/19/15.1.

⁴ C 2021/3.

Development Goals (SDGs).⁵ It contributes, in particular, to SDG 2 on Zero Hunger⁶ with FAO being the custodian United Nations agency for its Indicator 2.5.1 on *ex situ* conservation of plant and animal genetic resources for food and agriculture. In implementing the Second GPA, countries also addressed essential components of the Strategic Plan for Biodiversity 2011–2020, including the Aichi Biodiversity Targets,⁷ and will address key targets of the Post-2020 Global Biodiversity Framework.⁸

7. Overall progress in the implementation of the Second GPA is guided by FAO Members through the Commission and monitored through the World Information and Early Warning System on PGRFA (WIEWS), the information system established by FAO in 1993 for the preparation of periodic, country-driven global assessments of the status of conservation and use of PGRFA.

8. Key findings of an assessment of the implementation of the Second GPA covering the period of 1 January 2012 to 30 June 2014 were made available to the Seventh session of the Governing Body.⁹ In the course of 2020/21, countries reported on their implementation of the Second GPA between 1 July 2014 and 31 December 2019. These reports will feed into the Third Report (see below section IV).

III. FAO ACTIVITIES SUPPORTING THE IMPLEMENTATION OF THE SECOND GLOBAL PLAN OF ACTION FOR PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

9. Following up on recommendations from the Commission and its Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group), FAO since February 2019 has pursued initiatives and activities relating to the four main groups of PAs of the Second GPA, namely: *in situ* conservation and on-farm management; *ex situ* conservation; sustainable use; and building sustainable institutional and human capacities.

10. The Global Conference on Green Development of Seed Industries, convened by FAO on 4 and 5 November 2021 in a virtual format addressed all four PAs. With quality seeds being foundational to sustainable crop production systems and considering that at least 80 percent of all foods are plant-based, the event contributed to the identification of priority interventions to implement the FAO Strategic Framework 2022-31, which is aimed at the transformation to more efficient, inclusive, resilient and sustainable agrifood systems for better production, better nutrition, a better environment and a better life, thus aligning the Organization's work to the achievement of the 2030 Agenda and its Sustainable Development Goals (SDGs), especially SDGs 1 and 2.

11. About 2 200 stakeholders along the seed value chain from 126 FAO Members discussed evidence-based solutions that enhance farmers' access to quality seeds and planting materials of preferred productive, nutritious and resilient crop varieties during the conference. The two-day event, which consisted of a plenary session headlined by the FAO Director-General, thematic parallel sessions and a high-level ministerial segment, was structured around four themes, advanced technologies, conservation of plant genetic resources for food and agriculture, crop varietal development and adoption, and seed systems with a fifth, policy and governance, being crosscutting.

⁵ sdgs.un.org/goals

⁶ Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture; Target 2.5 By 2020, maintain the genetic diversity of seeds, cultivated plants and farmed and domesticated animals and their related wild species, including through soundly managed and diversified seed and plant banks at the national, regional and international levels, and promote access to and fair and equitable sharing of benefits arising from the utilization of genetic resources and associated traditional knowledge, as internationally agreed.

⁷ www.cbd.int/sp/

⁸ www.cbd.int/2011-2020/

⁹ 4 IT/GB-7/17/Inf.23, paragraphs 7–12.

12. A set of 10 recommendations on Strategic Actions for the Green Development of Global Seed Industries was identified by the Conference's Steering Committee. These are actionable interventions for leveraging fit-for-purpose scientific and technological innovations, enabled by adequate institutions and policy and regulatory regimes, to conserve plant genetic resources for food and agriculture; use them for breeding progressively superior crop varieties; and to enhance farmers' access to the quality seeds and planting materials of the most suitable crop varieties. These recommendations, which are being published in the conference's proceedings, will be presented to the 29th Session of FAO's Committee on Agriculture in July 2022.¹⁰

1. *IN SITU* CONSERVATION AND ON-FARM MANAGEMENT

A. First International Multi-stakeholder Symposium on Plant Genetic Resources for Food and Agriculture – Technical Consultation on *in situ* conservation and on-farm management of plant genetic resources for food and agriculture

13. As requested by the Commission, FAO held, as part of the First International Multi-stakeholder Symposium on PGRFA, two technical consultations on: (i) *in situ* conservation of crop wild relatives and wild food plants; and (ii) on-farm management of farmers' varieties/landraces. Owing to the COVID-19 pandemic, the symposium had to be postponed until 29 and 30 March 2021. It was held as a virtual meeting in cooperation with the International Treaty and the Global Crop Diversity Trust and was attended by more than 800 participants. A report on the Symposium,¹¹ the recordings of the technical presentations and the Symposium webcast have been made available.¹² The Proceedings of the Symposium will be made available by December 2022.¹³

14. The Symposium served as a forum for the diverse range of stakeholders involved in *in situ* conservation and on-farm management of PGRFA. It provided an overview of the state of knowledge on the conservation and sustainable use of crop wild relatives (CWR) and wild food plants. It highlighted advances in science and technology that are increasingly being used to mine novel alleles from CWR for use in crop improvement and to identify populations that are under threat and therefore require priority action.

15. The Symposium also highlighted methods to mainstream the conservation and sustainable use of farmers' varieties/landraces included grassroots multi-stakeholder engagements that led to the establishment of community seed banks and the formal registration of these cultivars – resulting ultimately in the ready availability of their quality-assured seeds.

16. Lessons to be learned from PGRFA conservation outside genebanks by various networks and communities of practice were shared during the Symposium. The Symposium indicated a widespread and deep interest in the subject matter and the need for a forum that facilitates exchange of information and multi-stakeholder discourse.

17. The Commission, at its last session, commended FAO for convening the Symposium, in collaboration with the Global Crop Diversity Trust and the International Treaty. It requested FAO to organize, subject to the availability of the necessary extra-budgetary resources, symposia and webinars on *in situ* conservation and on-farm management of PGRFA, at regular intervals, in collaboration with the International Treaty and other relevant international instruments or organizations, in support of the Second GPA and relevant articles of the International Treaty.¹⁴

¹⁰ COAG/2022/INF/7, paragraph 4.

¹¹ CGRFA-18/21/12.2/Inf.3.

¹² www.fao.org/about/meetings/multi-stakeholder-symposium-on-pgrfa/en

¹³ www.fao.org/about/meetings/multi-stakeholder-symposium-on-pgrfa/en/

¹⁴ CGRFA-18/21/Report, paragraph 98.

B. Voluntary Guidelines: Farmers' Varieties/Landraces and Crop Wild Relatives

18. At its Seventeenth Regular Session, the Commission endorsed the *Voluntary Guidelines on National Level Conservation and Sustainable Use of Farmers' Varieties/Landraces*. In response to the Commission's request, FAO published and disseminated the Voluntary Guidelines and encouraged countries to use them in planning and implementing efforts to conserve and sustainably use farmers' varieties/landraces. The Guidelines are available in four languages (Arabic, English, French and Spanish) in print and online.¹⁵ They complement the *Voluntary Guidelines for the Conservation and Sustainable Use of Crop Wild Relatives and Wild Food Plants*¹⁶ the Commission had endorsed in 2017.¹⁷

19. The Commission, at its last session, requested FAO, in collaboration with other international organizations with relevant experience, to support countries, in particular developing countries, in the development or revision of their national plans for the conservation and sustainable use of farmers' varieties/landraces as well as CWR and wild food plants, taking into account the two Guidelines. It further requested FAO to compile examples of the use of the two Guidelines with a view to improving their relevance and widening their use. It requested FAO to support countries, at their request, in the development of national inventories of CWR and wild food plants conserved *in situ* and of farmers' varieties/landraces managed on-farm. It also requested FAO, and invited donors, to continue supporting countries in their efforts to conserve PGRFA *in situ* and on-farm, and strengthening the links and complementarity between *ex situ* and *in situ* conservation.¹⁸

C. Direct support to Members

20. Since the Governing Body's last session, FAO, in collaboration with international and local partners, continued to support several activities on *in situ* conservation and on-farm management of PGRFA. Information on these activities is summarized in documentation presented to the Commission's Working Group in 2021.¹⁹

2. EX SITU CONSERVATION

A. Draft Practical Guides for the Application of the Genebank Standards for Plant Genetic Resources for Food and Agriculture

21. As requested by the Commission,²⁰ FAO developed three practical guides for the application of the *Genebank Standards for Plant Genetic Resources for Food and Agriculture* for the: (i) conservation of orthodox seeds; (ii) conservation in field genebanks; and (iii) conservation via *in vitro* culture. The Commission, at its last session, requested FAO to finalize and disseminate them.²¹ The Practical Guides, which are primarily addressed to technical staff of genebanks, were officially published and subsequently disseminated in June 2022.²²

¹⁵ FAO. 2019. *Voluntary Guidelines for the Conservation and Sustainable Use of Farmers' Varieties/Landraces*. Rome. doi.org/10.4060/CA5601EN.

¹⁶ FAO. 2017. *Voluntary guidelines for the conservation and sustainable use of crop wild relatives and wild food plants*. Rome. www.fao.org/publications/card/en/c/8f366de9-08a8-42ad-aae1-4f8f6822420e/

¹⁷ CGRFA-16/17/Report Rev.1, paragraph 62.

¹⁸ CGRFA-18/21/Report, paragraph 99.

¹⁹ CGRFA-18/21/12.2, paragraphs 14–15.

²⁰ CGRFA-17/19/Report, paragraph 65.

²¹ CGRFA-18/21/Report, paragraph 100.

²² FAO. 2022. *Practical guide for the application of the Genebank Standards for Plant Genetic Resources for Food and Agriculture: Conservation of orthodox seeds in seed genebanks*. Commission on Genetic Resources for Food and Agriculture. Rome. doi.org/10.4060/cc0021en; FAO. 2022. *Practical guide for the application of the Genebank Standards for Plant Genetic Resources for Food and Agriculture: Conservation in field genebanks*. Commission on Genetic Resources for Food and Agriculture. Rome. doi.org/10.4060/cc0023en; FAO. 2022. *Practical guide for the application of the Genebank Standards for Plant Genetic Resources for Food and Agriculture: Conservation via in vitro culture*. Commission on Genetic Resources for Food and Agriculture. Rome. doi.org/10.4060/cc0025en.

22. The Commission also requested FAO to develop further additional Practical Guides, especially for the conservation in genebanks of species producing recalcitrant seeds, and for cryopreservation, in collaboration with relevant international and national partners, including the CGIAR and the Global Crop Diversity Trust. These guides will be prepared in the coming months.

B. Technical support

23. FAO contributed to discussions on the proposed CGIAR GreenPass Phytosanitary Protocol for Germplasm Exchange aimed at facilitating the movement of germplasm through the CGIAR Centers. This protocol would involve an accepted quality assurance system that recognizes compliance with global phytosanitary standards, which would include the accreditation of procedures and processes, proficiency testing, periodic auditing and presentation of a quality assurance statement for the exchanged germplasm. FAO also contributed to an initiative of the CGIAR Genebank Platform to develop a guide supporting informed decision-making in the management of large and diverse germplasm collections. Moreover, FAO participated in a workshop on the development of national genebanks in Member States of the Organization of Islamic Cooperation, in support of an initiative by the Islamic Organization for Food Security.

3. SUSTAINABLE USE

A. Status and trends of seed policies

24. At its Seventeenth Regular Session, the Commission requested FAO to carry out, in coordination with the International Treaty and in consultation with the International Union for the Protection of New Varieties of Plants (UPOV), in-depth case studies on the effects of seed policies, laws and regulations. The Commission also requested FAO to clarify the terms “farmers’ seed systems”, “informal seed systems”, “formal seed systems” and “integrated seed systems”, taking into account submissions by Members and observers.²³ In response to the Commission’s request, FAO prepared the study *Impact of implementation of seed legislation on diversity of plant genetic resources for food and agriculture*,²⁴ for consideration by the Working Group and the Commission.

25. The Commission, in considering the conclusions of the study, requested FAO to undertake, in collaboration with the International Treaty, further research on the impact of seed policies, laws and regulations, taking into account the variety of factors that may affect, and possibly improve, farmers’ ability to access sufficient and affordable seeds and planting materials of diverse, locally adapted varieties, including farmers’ varieties/landraces.²⁵ Preliminary results of this joint research will be presented to the Eleventh Session of the Working Group.

B. Strengthening seed systems

26. A critically important component of FAO’s work on sustainable use of PGRFA is strengthening seed systems. This is being achieved by providing support to countries in creating an enabling environment for the establishment of seed enterprises and in promoting their efficient management. FAO’s key objective in this regard is to ensure that farmers, in particular small-scale farmers, have sustained access to affordable quality seeds and planting materials of their preferred well-adapted, productive, nutritious crop varieties, which are resistant to prevailing biotic and abiotic stresses. FAO intervenes typically at the regional level to facilitate harmonization of seed laws and policies. Interventions at the national or local community levels aim to develop and implement regulatory frameworks and strengthen institutional and human capacities.

²³ CGRFA-17/19/Report, paragraph 67.

²⁴ CGRFA-18/21/12.3; CGRFA-18/21/12.3/Inf.1.

²⁵ CGRFA-18/21/Report, paragraph 105.

27. During the reporting period, initiatives aimed at strengthening the seed delivery value chain were implemented in more than 30 countries. The suite of interventions includes the provision of support for the enhanced adoption of crop varieties, including biofortified ones; community-level seed production and delivery systems; pre-basic and basic seed production and supply; capacity development for seed testing laboratories and international accreditation; training and provision of seed processing equipment; and the strengthening of seed certification systems. More detailed information on these and other relevant interventions is contained in the document, *FAO activities in support of the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture*.²⁶

28. The Commission, at its last session, requested FAO to continue assisting countries in strengthening national seed systems, including plant breeding, for the delivery of diverse and high-quality seeds and planting materials, in particular to meet the needs and priorities of smallholder farmers.²⁷

C. Rehabilitation of seed systems

29. An underlying principle of FAO's support to countries in the re-building of agricultural production systems following disasters and strife has been to ensure that the provision of emergency seed relief forms part of the overall seed sector development in the long term. In this regard, FAO, in collaboration with its partners, carries out seed security assessments in countries that require assistance with restarting crop production after crises. Based on these assessments, both the immediate seed relief responses and the long-term seed sector development strategies reflect as accurately as possible the prevailing national contexts. Over the reporting period, FAO, in collaboration with national and international partners, carried out seed security assessments in four African countries,²⁸ with further activities planned in another five.²⁹ More detailed information on FAO's support to the rehabilitation of seed systems is provided in the document *FAO activities in support of the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture*.³⁰

D. Strengthening plant breeding

30. During the reporting period, FAO continued to strengthen capacities for developing well-adapted crop varieties that are most suited to local agroecosystems and farming systems. In this regard, FAO supported the genetic improvement of berries in the Republic of Moldova³¹ and the strengthening of the crop's value chain, including improved access to markets. In Mongolia, FAO's intervention resulted in the enhanced access of farmers to quality planting materials of 36 different well-adapted varieties of apple, plum, cherry, blueberry, blackcurrant and strawberry.³² In the Gambia, FAO is supporting the publication of a catalogue of national varieties and passport data for seven crops.³³ More detailed information on relevant activities of FAO, including the Joint FAO/IAEA Centre (CJN), are summarized in the document *FAO activities in support of the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture*.³⁴

31. The Commission, at its last session, requested FAO to continue supporting countries, at their request, in collaboration with the International Treaty, in strengthening their capacity in crop

²⁶ CGRFA-18/21/12.2, paragraphs 22–26.

²⁷ CGRFA-18/21/Report, paragraph 102.

²⁸ The Niger, Nigeria, Sierra Leone and South Sudan.

²⁹ Afghanistan, Democratic Republic of the Congo, Somalia, Sudan and the Syrian Arab Republic.

³⁰ CGRFA-18/21/12.2, paragraphs 32–38.

³¹ TCP/MOL/3608: Strengthening the capacity of smallholders in berry production.

³² TCP/MON/3605: Improving fruits and berry production in Mongolia.

³³ GCP /GAM/040/EC - Agriculture for Economic Growth and Food Security.

³⁴ CGRFA-18/21/12.2, paragraphs 27–31.

improvement, including pre-breeding, in support of the implementation of the Second GPA and Article 6 of the International Treaty.³⁵

4. BUILDING SUSTAINABLE INSTITUTIONAL AND HUMAN CAPACITIES

32. As requested by the Commission,³⁶ during the reporting period FAO continued to support the strengthening of human and institutional capacities for the conservation and sustainable use of PGRFA especially in developing Member Nations.

33. The strengthening of partnerships and linkages is a critical delivery mechanism for FAO's work in this regard. Work in countries is facilitated by collaboration with various partners, including UN agencies, such as the World Food Programme and the International Fund for Agricultural Development and the World Meteorological Organization. Other partners with whom FAO has been working closely are the Global Crop Diversity Trust, CGIAR Centers, the West and Central African Council for Agricultural Research and Development (i.e. CORAF-WECARD), the International Seed Federation and the International Seed Testing Association. Networks and coordination bodies are also key to effective collaboration among partners for implementing the Second GPA with enhanced efficiencies. Over the reporting period, FAO provided support to various networks and bodies, including the Coconut Genetic Resources Network (COGENT), Global Food Security Cluster, Standards for Supporting Agricultural Livelihoods in Emergencies (SEADS) and the African Orphan Crops Consortium (AOCC).

34. FAO also implemented several field activities to strengthen capacities in countries. For instance, FAO provided support to integrate information on genebank holdings in Lebanon into two regional information systems, as well as strengthening national germplasm information networks on genebank collections.

A. National strategy for PGRFA

35. FAO supported Angola, Eswatini, Namibia and Zimbabwe to develop, validate and launch their national strategies and action plans.³⁷ The work also enabled the strengthening of the capacity of national staff of these countries in modern and efficient methods for characterizing, evaluating and improving promising germplasm to address climate change.

B. National Focal Points

36. At its Fifteenth Regular Session, the Commission invited countries that have not yet done so to nominate a National Focal Point (NFP) for reporting on the implementation of the Second GPA.³⁸ As of 30 June 2022, 131 countries have nominated NFPs. This reflects the high level of commitment for reporting on the state of conservation and sustainable use of PGRFA. In addition to the periodic reporting on the implementation of the Second GPA and on SDG indicator 2.5.1, the NFPs are critical for assessing the implementation of the Second GPA and the preparation of country reports for the Third Report.

C. World Information and Early Warning System on PGRFA

37. The Commission, at its Seventeenth Regular Session, invited FAO to continue elaborating, based on country reporting, the status of the implementation of SDG Target 2.5, and to share the results with the Working Group and the Commission. It also requested FAO to continue developing the WIEWS portal and strengthening cooperation with the global information system (GLIS) and Genesys to avoid duplication of efforts. In addition, it requested a

³⁵ CGRFA-18/21/Report, paragraph 102

³⁶ CGRFA-17/19/Report, paragraph 60.

³⁷ 101 TCP/SFS 3601: Support for the development of national capacities for conservation and sustainable utilization of plant genetic resources for food and agriculture.

³⁸ CGRFA-15/15/Report, paragraph 18.

report clarifying the specific roles of these databases in order to streamline country reporting to the Commission and the International Treaty.³⁹

38. At its Eighteenth Regular Session, the Commission welcomed the report *Strengthening cooperation among global information systems on plant genetic resources for food and agriculture*⁴⁰ clarifying the specific roles of WIEWS, GLIS and Genesys and requested FAO to continue developing the WIEWS portal while strengthening cooperation with other information systems, with a view to avoiding duplication of efforts and facilitating reporting by countries.⁴¹

39. WIEWS serves as the global system to monitor the implementation of the Second GPA and the plant component of SDG Target 2.5. One of the indicators agreed by the Commission for monitoring the Second GPA has also been adopted by the United Nations General Assembly, in July 2017, to monitor the plant component of SDG Target 2.5. SDG 2.5.1.a⁴² is a Tier I indicator, i.e. an indicator with internationally agreed methodology and a global reporting rate equal to or higher than 50 percent. Progress on SDG 2.5.1 continues to be monitored worldwide on an annual basis. Data on the implementation of the plant component of SDG Target 2.5 have been collected and made available by FAO in 2016, 2017, 2018, 2019, 2020, 2021 and 2022. Over these years, the number of countries reporting on the indicator has significantly increased from 71 countries in 2014 and 103 in 2019, to 115 in 2021. Detailed records of *ex situ* accessions, totalling over 5.8 million as of December 2021, have been published through WIEWS. Metadata results and narratives for the annual reports on all the SDG indicators under FAO custodianship have been made available through the FAO website. In order to raise awareness of the importance of monitoring the indicator on *ex situ* holdings, an e-learning course on SDG 2.5.1.a was developed in 2019 and made available in English, French and Spanish.⁴³ In 2021, a new country from South-Eastern Asia holding important *ex situ* collections reported for the first time.

40. The Commission, at its last session, requested FAO to propose a revision and significant simplifications of the WIEWS Reporting Tool, and the priority activities and indicators on which countries shall report, to increase the participation of national stakeholders, once the Third Report has been completed and the Second GPA has been reviewed.⁴⁴

IV. PREPARATION OF THE THIRD REPORT ON THE STATE OF THE WORLD'S PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

41. According to Article 17.4 of the International Treaty, Contracting Parties shall cooperate with the Commission in its periodic reassessment of the state of the world's plant genetic resources for food and agriculture in order to facilitate the updating of the rolling Global Plan of Action.

42. As reported to the Eighth Session of the Governing Body, the Commission, at its Seventeenth Regular Session in 2019, invited NFPs to report through WIEWS between January and December 2020 on the implementation of the Second GPA for the period of July 2014 to December 2019.⁴⁵ In addition, it invited NFPs to provide a summative narrative of the progress made (between January 2012 and December 2019) and the remaining gaps and constraints. The Commission further endorsed the proposal that country reports contributing to the first and the second assessment of the implementation of the Second GPA would also contribute to the preparation of the Third Report.⁴⁶

³⁹ CGRFA-17/19/Report, paragraph 66.

⁴⁰ CGRFA-18/21/12.2.

⁴¹ CGRFA-18/21/Report, paragraph 104.

⁴² Indicator 2.5.1a addresses the plant component of Target 2.5; Indicator 2.5.1b addresses the animal component.

⁴³ elearning.fao.org/course/view.php?id=392

⁴⁴ CGRFA-18/21/Report, paragraph 109.

⁴⁵ IT/GB-8/19/15.1/Inf.1, paragraph 9.

⁴⁶ CGRFA-17/19/Report, paragraph 69.

43. Even though considerable progress had been made by countries in the preparation of their reports, the Commission, at its Eighteenth Regular Session in September 2021, agreed to extend the deadline for country reporting on the state of PGRFA to the end of 2021. It urged National Focal Points that have not yet done so to report through WIEWS on the implementation of the Second GPA and to provide a summative narrative of the overall progress made in the conservation and sustainable use of PGRFA, as well as on the remaining gaps and constraints. As of 31 December 2021, 78 countries had completed online reporting, while one country had provided a stand-alone report. In addition, 13 countries were in an advanced stage of the reporting process while 5 were still in the early stages.

44. Data submitted by countries through WIEWS are currently being validated and analysed. The data submitted for the first and the second assessment will form the basis of the draft Third Report, which will be made available by FAO in early 2023, for review by the Working Group and the Commission. At this stage, all data on the implementation of the Second GPA will also become available to the Contracting Parties of the International Treaty. 51 countries received financial support for the preparation of their national reports.

45. The Commission agreed that the Third Report will reflect the structure of the Second GPA, with a chapter on *in situ* and *ex situ* conservation of PGRFA, a chapter on sustainable use and a chapter on institutional and human capacities for the conservation and sustainable use of PGRFA. It also supported the preparation of thematic background studies, on germplasm exchange, nutrition, climate change, novel biotechnologies and phenotyping and genotyping, to complement the information gathered from countries on the implementation of the Second GPA. Cooperation between FAO and the Secretariat of the Treaty is on-going for the preparation of the Third Report, in particular for the elaboration of the chapter on institutional and human capacities for PGRFA conservation and sustainable use and the thematic background study on germplasm exchange.

V. AQUATIC GENETIC RESOURCES FOR FOOD AND AGRICULTURE

46. The farming of seaweeds to produce chemicals for the food and other industries, as well as products for direct consumption as human food at over 35 million tonnes, accounts for over 25 percent of global annual aquaculture production.⁴⁷

47. The Commission, at its last session, welcomed the report on *The State of the World's Aquatic Genetic Resources for Food and Agriculture*⁴⁸ and took note of its key findings, including the needs and challenges identified. The report had been launched by FAO in August 2019. The Commission requested FAO to continue distributing the report and communicating its key messages widely, including through regional and sub-regional workshops. It further requested FAO to make available the key terminology from the report (e.g. as a stand-alone glossary) and integrate relevant terms into FAO's Term Portal.⁴⁹

48. The Commission reviewed and approved the *Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture*⁵⁰, which, in December of last year, was adopted by 168th Session of the Council,⁵¹ as mandated by the Conference⁵²

⁴⁷ FAO. 2022. *The State of World Fisheries and Aquaculture 2022. Towards Blue Transformation*. Rome, FAO. doi.org/10.4060/cc0461en

⁴⁸ FAO. 2019. *The State of the World's Aquatic Genetic Resources for Food and Agriculture*. FAO Commission on Genetic Resources for Food and Agriculture assessments. Rome. doi.org/10.4060/CA5256EN

⁴⁹ www.fao.org/faoterm/en/

⁵⁰ FAO. 2022. *Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture*. Commission on Genetic Resources for Food and Agriculture. Rome. doi.org/10.4060/cb9905en

⁵¹ CL 168/REP, paragraph 38(a).

⁵² C 2021/REP, paragraph 45(b).

49. The Commission highlighted the need for the development of quantifiable indicators for the monitoring of the Global Plan of Action and requested that these be incorporated into AquaGRIS,⁵³ the global information system under development by FAO,⁵⁴ as appropriate. Furthermore, it requested FAO to assist Members in the implementation of the Global Plan of Action, especially in terms of financial resources and technical assistance, and invited donors to provide extra-budgetary funds to support Members in its implementation. The Commission noted that difficulties in obtaining data from the private sector and differences among countries with regard to the species economically most relevant to them could impact the implementation of the Global Plan of Action.

VI. FOREST GENETIC RESOURCES

50. The Commission, at its last session, considered the *Status of Implementation of the Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources*⁵⁵ and invited countries to strengthen their efforts to implement the Global Plan of Action, to contribute, through their NFPs, to the development and testing of the new global information system on forest genetic resources (FGR), and to continue providing data on FGR. In addition, it encouraged countries to continue mainstreaming FGR into larger and holistic actions on sustainable forest management and forest-based adaptation and mitigation measures, as well as to identify needs for specific and strategic actions on FGR.⁵⁶

51. The Commission requested FAO to continue coordinating and supporting the implementation of the Global Plan of Action, in collaboration with regional networks on FGR and relevant international organizations. It further requested FAO to continue its efforts in developing the new user-friendly global information system on FGR and in increasing international awareness of the Global Plan of Action and the importance of FGR, and to make the *Voluntary Guidelines for Preparing a National Strategy for Forest Genetic Resources*⁵⁷ available in the official UN languages.⁵⁸

52. The Commission also considered the status of preparation of *The Second Report on the State of the World's Forest Genetic Resources*⁵⁹ and took note of the progress made. It invited countries that have not yet done so to nominate a NFP and alternates, as needed. It also urged countries, regional networks and relevant international organizations that have not yet done so to submit their reports to FAO by 31 October 2021, or as soon as possible thereafter.⁶⁰

53. As of June 2022, 108 countries have nominated their NFPs and 61 countries have provided their data and information on FGR through an online questionnaire. Of these countries, 29 have also sent a written country report to FAO. Furthermore, FAO has received reports from two regional networks and one international organization.

VII. CROSS-SECTORAL MATTERS

54. While the different components of biodiversity for food and agriculture (BFA) have distinct characteristics, they also share common features. All contribute to meeting the basic needs of food and livelihood security and many depend on human management. The different components face both unique management challenges, as well as common threats, such as climate change.

⁵³ www.fao.org/fishery/aquagris/home

⁵⁴ CGRFA-18/21/8.3/Inf. 1.

⁵⁵ CGRFA-18/21/9.2.

⁵⁶ CGRFA-18/21/Report, paragraph 61–62.

⁵⁷ CGRFA-17/19/10.2/Inf.3.

⁵⁸ CGRFA-18/21/Report, paragraph 63.

⁵⁹ CGRFA-18/21/9.3.

⁶⁰ CGRFA-18/21/Report, paragraph 65.

55. The Commission remains committed to addressing cross-cutting issues that can impact any or all components of BFA, such as climate change or the issue of access and benefit-sharing. A number of international bodies deal with these issues. However, the Commission plays a unique role in that it provides a permanent forum where governments discuss all matters, including cross-sectorial matters, *specifically* relevant to BFA, including genetic resources for food and agriculture (GRFA). It follows carefully policy developments in other international fora and aims to ensure policy coherence through close collaboration with other international organizations and instruments.

(i) Biodiversity for food and agriculture

56. Sustainably using and conserving the biodiversity that supports agriculture, forestry, fisheries and aquaculture is vital to efforts to meet humanity's growing need for food, feed, fibre and fuel while protecting the planet for future generations. BFA also provides a range of crucial ecosystem services, such as pollination, pest control, soil health, habitat provisioning and much more. Furthermore, it makes production systems and livelihoods more resilient to shocks and stresses, including climate change, through, for example, habitats important to fisheries and coastal livelihoods such as mangrove forests that protect against extreme weather, and breeds of animals and varieties of plants that are more resilient to drought.

57. The Commission, at its last session, endorsed, in response to the report on *The State of the World's Biodiversity for Food and Agriculture*,⁶¹ the *Framework for Action on Biodiversity for Food and Agriculture*.⁶² Subsequently, the Framework was endorsed by the Council.⁶³

58. The Commission requested its Secretary to convene, after the adoption of the Post-2020 Global Biodiversity Framework by the 15th meeting of the Conference of the Parties to the Convention on Biological Diversity (CBD), and subject to the availability of the necessary extra-budgetary resources, an open-ended meeting of the Group of National Focal Points for Biodiversity for Food and Agriculture.

59. The Commission requested the open-ended meeting of the Group of National Focal Points for Biodiversity for Food and Agriculture and the intergovernmental technical working groups to assess the Post-2020 Global Biodiversity Framework, once approved, to consider the need for adjustments or additions to the work of the Commission to address the implementation of the Post-2020 Global Biodiversity Framework, including assessing the need for a Global Plan of Action on Biodiversity for Food and Agriculture or other policy tools, within the Commission's mandate and avoiding duplication of work, and to make recommendations in this regard to the Nineteenth Regular Session of the Commission.

60. The Commission called upon FAO to strengthen, within its Strategic Framework 2022–2031⁶⁴ and the *FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors*,⁶⁵ technical support to Members for the implementation of the sectoral Global Plans of Action and the Framework for Action on Biodiversity for Food and Agriculture.

(ii) Access and benefit-sharing

61. The Commission, at its last session, reviewed its past work on access and benefit-sharing (ABS) and recalled the important role it has played over the past two decades in advancing work on ABS for GRFA. It took note of relevant developments under other international agreements

⁶¹ FAO. 2022. *Framework for Action on Biodiversity for Food and Agriculture*. FAO Commission on Genetic Resources for Food and Agriculture. Rome. doi.org/10.4060/cb8338en

⁶² CGRFA-18/21/Report.

⁶³ CL 168/REP, paragraph 38.

⁶⁴ FAO. 2021. *Strategic Framework 2022-31*. Rome. www.fao.org/3/cb7099en/cb7099en.pdf

⁶⁵ FAO. 2020. *FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors*. Rome. doi.org/10.4060/ca7722en

and instruments, including the ongoing preparation of the Post-2020 Global Biodiversity Framework, and emphasized the need to avoid duplication of work and ensure consistency.⁶⁶

62. The Commission welcomed the *Survey of access and benefit-sharing country measures accommodating the distinctive features of genetic resources for food and agriculture and associated traditional knowledge*⁶⁷ and requested the Secretariat to compile, as a stand-alone document, specific examples of existing country legislative, administrative or policy ABS measures that directly or indirectly accommodate distinctive features of GRFA and associated traditional knowledge (TKGRFA) for review by the intergovernmental technical working groups, the ABS Expert Team and the Commission at their next sessions.⁶⁸

63. The Commission also supported future work that further deepens the empirical evidence needed to understand the effects of ABS measures. It requested the Secretariat to prepare, based on responses to a pre-tested country questionnaire, a report on the practical application of ABS country measures to the different subsectors of GRFA and TKGRFA, including monitoring of ABS compliance, with a view to identifying the effects of ABS measures on the utilization and conservation of the different subsectors of GRFA and TKGRFA and the sharing of benefits. In addition, the Commission requested the Secretariat to prepare, based on responses to the same questionnaire, an evaluation of the usefulness of the ABS Elements⁶⁹ for the development and implementation of ABS measures, with the aim of identifying and addressing gaps and weaknesses in the ABS Elements.⁷⁰

64. The Commission requested that the Secretariat, in close collaboration with other relevant international organizations and instruments, including the International Treaty and the CBD, continue to raise awareness among key stakeholders, including breeders, and provide capacity-building and training programmes on ABS for GRFA, in particular for developing countries. It requested its Secretary to bring the ABS Elements with Explanatory Notes to the attention of the Open-ended Working Group on the Post-2020 Global Biodiversity Framework.⁷¹

65. The Commission requested the Secretariat to collaborate with the Secretariats of the International Treaty and the CBD, as needed, on means of assembling relevant information for measuring and monitoring monetary and non-monetary benefit-sharing, within their respective mandates and existing frameworks, and report the results for consideration by the intergovernmental technical working groups and the Commission.⁷²

(iii) Digital sequence information

66. The Commission also considered innovation opportunities, challenges and implications “digital sequence information” (DSI) offers for the conservation and sustainable use of genetic resources for food and agriculture.⁷³ The Commission took note of the actual and potential applications of DSI relevant to the conservation and sustainable use of GRFA and stressed the innovation opportunities DSI offers for research and development related to GRFA as well as the challenges many countries face in developing the technical, institutional and human capacity necessary to use DSI for research and development.⁷⁴

⁶⁶ CGRFA-18/21/Report, paragraph 24.

⁶⁷ Humphries, F., Laird, S., Wynberg, R., Morrison, C. Lawson, C. & Kolesnikova, A. 2021. *Survey of access and benefit-sharing country measures accommodating the distinctive features of genetic resources for food and agriculture and associated traditional knowledge*. Rome, FAO on behalf of the Commission on Genetic Resources for Food and Agriculture. doi.org/10.4060/cb6525en

⁶⁸ CGRFA-18/21/Report, paragraphs 25–26.

⁶⁹ FAO. 2019. *ABS Elements. Elements to facilitate domestic implementation of access and benefit-sharing for different subsectors of genetic resources for food and agriculture with Explanatory Notes*. Rome. www.fao.org/3/ca5088en/CA5088EN.pdf

⁷⁰ CGRFA-18/21/Report, paragraph 27.

⁷¹ CGRFA-18/21/Report, paragraph 28.

⁷² CGRFA-18/21/Report, paragraph 29.

⁷³ CGRFA-18/21/5.

⁷⁴ CGRFA-18/21/Report, paragraph 32.

67. The Commission stressed the need for an internationally agreed definition of DSI, or of an alternative term, and noted that its work on DSI would in no way prejudice the outcome of ongoing discussions on DSI, including its scope and definition, in other fora. It requested FAO to support countries, in particular developing countries and countries with economies in transition, in building the technical, institutional and human capacity necessary to utilize DSI for research and development related to GRFA.⁷⁵

68. The Commission requested its Secretary to prepare a document reflecting key practices and experiences on how DSI is generated, stored, accessed and used for research and development related to GRFA, including relevant information on intellectual property protection, for review by the intergovernmental technical working groups and the ABS Expert Team at their next sessions.⁷⁶

69. The Commission also requested the Secretariat to hold an intersessional workshop, in collaboration with relevant instruments and organizations, to raise awareness among relevant stakeholders of the role of DSI for the conservation and sustainable use of GRFA and the sharing of benefits derived from them, address the state of the art of DSI on genetic resources, present possible implications that related technologies might have for research and development related to GRFA, and consider the challenges associated with accessing and making full use of DSI.⁷⁷ The workshop will be held in November of this year as a virtual event.

70. The Commission further requested the Secretariat to inform other relevant instruments and organizations about the Commission's work on DSI, including the important role the Commission attaches to DSI for the characterization, conservation and sustainable use of GRFA.⁷⁸

(iv) The role of biodiversity for food and agriculture for food security, nutrition and human health

71. The Commission, at its last session, considered the role of BFA for food security, nutrition and human health and requested FAO to monitor relevant developments at the nexus of BFA, food security, nutrition and human health in other fora and to report them to the Commission.

72. The Commission recommended that FAO continue collaboration with its partners to promote healthy diets and nutrition from sustainable food systems, increase the sustainability of agricultural practices and protect the livelihoods of farmers from the impacts of plant and animal diseases, promote food safety, and prevent and control infectious diseases and antimicrobial resistance, as appropriate. It requested FAO to continue raising awareness of, and increasing knowledge on, the important roles that GRFA and BFA may play in food system transformations and in addressing challenges related to food security, nutrition and human health. It further requested FAO to consider the contribution of BFA and GRFA to nutrition and the "One Health" approach, based on scientific evidence and within FAO's mandate.

73. The Commission, moreover, requested FAO to strengthen its support to Members, at their request, in integrating the conservation and sustainable use of BFA and GRFA across their food security, nutrition and health policies, plans and activities.

⁷⁵ CGRFA-18/21/Report, paragraph 33–34.

⁷⁶ CGRFA-18/21/Report, paragraph 35.

⁷⁷ CGRFA-18/21/Report, paragraph 38.

⁷⁸ CGRFA-18/21/Report, paragraph 40.

(v) Climate change and genetic resources for food and agriculture

74. The Commission took note of the scoping study on *The role of genetic resources for food and agriculture in climate change adaptation and mitigation*⁷⁹ and invited FAO to publish it in the official UN languages, subject to the availability of the necessary resources.⁸⁰

75. The Commission revised work scheduled within its workstream on climate change and stressed that future work of the Commission on climate change should build on existing work on GRFA and be complementary to the work of other relevant international organizations and instruments.⁸¹

76. The Commission requested FAO to review and revise, as appropriate, the draft questions on climate change and GRFA,⁸² with a view to shortening, simplifying and testing them and streamlining the reporting process, for consideration by the intergovernmental technical working groups. It further requested FAO to reflect the questions, as revised by the intergovernmental technical working groups, in future reporting formats through which countries report on the implementation of Global Plans of Action.⁸³

77. The Commission requested the intergovernmental technical working groups to review and revise, as appropriate, the *Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning*,⁸⁴ taking into account the need to address the vulnerabilities of GRFA to climate change, in line with relevant international agreements, for consideration by the Commission at its next session.⁸⁵

78. The Commission further requested FAO to increase capacity-building and training programmes on climate change adaptation and mitigation in collaboration with existing intergovernmental and international bodies. The Commission further requested that FAO consider – once responses to the questions have been received and compiled, and taking the outcome into account – organizing regional workshops on climate change and GRFA for National Focal Points/Coordinators to allow for the sharing of country experiences and for the discussion of opportunities for collaboration, as well as a global multi-stakeholder workshop on GRFA and climate change.⁸⁶

⁷⁹ CGRFA-18/21/3/Inf.1.

⁸⁰ CGRFA-18/21/Report, paragraph 17; FAO. 2022. *The role of genetic resources for food and agriculture in adaptation to and mitigation of climate change*. FAO Commission on Genetic Resources for Food and Agriculture. Rome. doi.org/10.4060/cb9570en

⁸¹ CGRFA-18/21/Report, paragraph 18.

⁸² CGRFA-18/21/3, *Appendix II*.

⁸³ CGRFA-18/21/Report, paragraph 19.

⁸⁴ FAO. 2015. *Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning*. Rome. www.fao.org/3/i4940e/i4940e.pdf

⁸⁵ CGRFA-18/21/Report, paragraph 20.

⁸⁶ CGRFA-18/21/Report, paragraph 21.