



**Food and Agriculture  
Organization of the  
United Nations**



**International Treaty  
on Plant Genetic Resources  
for Food and Agriculture**

**Item 16.1 of the Provisional Agenda**

**TENTH SESSION OF THE GOVERNING BODY**

**Rome, Italy, 20–24 November 2023**

**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 Plan of Action for Plant Genetic Resources for Food and Agriculture.

This report, prepared in close collaboration with the responsible technical 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 Ninth Session of the Governing Body.

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## Table of Contents

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|  | Paragraphs |
|--|------------|
| I. Introduction.....   | 1–3        |
| II. Implementation by countries of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture.....                    | 4–9        |
| III. FAO activities supporting the implementation of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture ..... | 10         |
| 1. <i>In situ</i> conservation and on-farm management.....   | 11–14      |
| 2. <i>Ex situ</i> conservation .....   | 15–18      |
| 3. Sustainable use.....  | 19–28      |
| 4. Building sustainable institutional and human capacities.....  | 29–34      |
| IV. Preparation of <i>The Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture</i> .....                    | 35–41      |
| V. Review of the Second Global Plan of Action on Plant Genetic Resources for Food and Agriculture.....   | 42–43      |
| VI. Aquatic Genetic Resources for Food and Agriculture.....  | 44–45      |
| VII. Forest Genetic Resources.....   | 46–49      |
| VIII. Biodiversity for Food and Agriculture.....   | 50–55      |
| IX. Cross-sectoral matters.....  | 56         |
| 1. Climate change and genetic resources for food and agriculture .....   | 57–60      |
| 2. Access and benefit-sharing.....   | 61–65      |
| 3. Digital sequence information.....   | 66–72      |
| 4. The role of biodiversity for food and agriculture for food security, nutrition and human health.....  | 73–78      |
| <i>Appendix: Preliminary findings of the draft Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture</i>     |            |

## 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.”<sup>1</sup>

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 Eleventh Session of the Commission’s Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group), held from 18 to 20 April 2023, and the Commission’s Nineteenth Regular Session, held from 17 to 21 July 2023, as well as on FAO activities carried out since the Ninth 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).<sup>2</sup>

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*.<sup>3</sup>

## 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 (PAs) 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.<sup>4</sup> The implementation of the 18 PAs of the Second GPA contributes directly to the achievement of the Sustainable Development Goals (SDGs).<sup>5</sup> It contributes, in particular, to SDG 2 on Zero Hunger<sup>6</sup> with FAO being the custodian United Nations

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<sup>1</sup> *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*.

<sup>2</sup> IT/GB-10/23/16.1/Inf.2.

<sup>3</sup> IT/GB-10/23/16.1.

<sup>4</sup> C 2021/3.

<sup>5</sup> [sdgs.un.org/goals](https://sdgs.un.org/goals)

<sup>6</sup> 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

agency for its Indicator 2.5.1a on *ex situ* conservation of plant genetic resources for food and agriculture. In implementing the Second GPA, countries also address essential components of Kunming-Montreal Global Biodiversity Framework adopted at the end of 2022 by the Conference of the Parties to the Convention on Biological Diversity.<sup>7</sup>

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 the 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.<sup>8</sup> 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, which will be made available in due time on the WIEWS website, feed into the Third Report, a first draft of which was presented to the Working Group and the Commission at their last sessions and is made available to the current session of the Governing Body<sup>9</sup> (see below section IV).

9. At its last session, the Commission also initiated the review of the Second GPA with the aim to revise it in light of the findings of the Third Report (see below section V).

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

10. Following up on recommendations from the Commission and its Working Group, FAO 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.

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

##### **A. Proceedings of the First International Multi-Stakeholder Symposium on Plant Genetic Resources for Food and Agriculture**

11. As reported to the Governing Body at its last session,<sup>10</sup> FAO, in cooperation with the International Treaty and the Global Crop Diversity Trust, held, as part of the First International Multi-stakeholder Symposium on PGRFA, virtual consultations in 2021 on: (i) *in situ* conservation of crop wild relatives and wild food plants; and (ii) on-farm management of farmers' varieties/landraces. A report on the Symposium,<sup>11</sup> the recordings of the technical presentations and the Symposium webcast have been made available.<sup>12</sup> At the end of 2022, FAO also published the proceedings of the event.<sup>13</sup>

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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.

<sup>7</sup> Decision 15/4 0- Kunming-Montreal Global Biodiversity Framework. <https://www.cbd.int/doc/decisions/cop-15/cop-15-dec-04-en.pdf>

<sup>8</sup> IT/GB-7/17/Inf.23, paragraphs 7–12.

<sup>9</sup> IT/GB-10/23/16.1/Inf.2.

<sup>10</sup> IT/GB-9/22/16.1, paragraphs 13-17.

<sup>11</sup> CGRFA-18/21/12.2/Inf.3.

<sup>12</sup> [www.fao.org/about/meetings/multi-stakeholder-symposium-on-pgrfa/en](http://www.fao.org/about/meetings/multi-stakeholder-symposium-on-pgrfa/en)

<sup>13</sup> FAO. 2022. *Proceedings of the 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 – 29–30 March 2021, Rome, Italy*. Rome. <https://doi.org/10.4060/cc3716en>

12. In response to a request by the Commission, a webinar on the role of the conservation and sustainable use of crop wild relatives and wild food plants was organized, in collaboration with the International Treaty, on 28 February 2023.<sup>14</sup>

### **B. Conservation and sustainable use of crop wild relatives/wild food plants and farmers' varieties/landraces**

13. In 2017 and 2019, respectively, the Commission endorsed the *Voluntary Guidelines for the Conservation and Sustainable Use of Crop Wild Relatives and Wild Food Plants*<sup>15</sup> and the *Voluntary Guidelines for the Conservation and Sustainable Use of Farmers' Varieties/Landraces*<sup>16</sup> and encouraged countries to use them.<sup>17</sup> In 2021, the Commission requested FAO 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, crop wild relatives and wild food plants, taking into account the two voluntary guidelines. It further requested FAO to compile examples of the use of the two voluntary guidelines, with a view to improving their relevance and widening their use.<sup>18</sup> In response to this request, the voluntary guidelines have been used in FAO's work on the respective themes and in particular for guiding countries in the development of projects for the Eighth Replenishment Cycle of the Global Environment Facility (GEF).<sup>19</sup> The voluntary guidelines have also served as reference resources for the implementation of GEF projects, specifically in China,<sup>20</sup> India,<sup>21</sup> Indonesia,<sup>22</sup> Mexico<sup>23</sup> and Tajikistan,<sup>24</sup> with FAO acting as GEF implementing agency. As requested by the Commission,<sup>25</sup> FAO also supported countries in the development of national inventories of crop wild relatives and wild food plants conserved *in situ* and of farmers' varieties/landraces managed on-farm. Such national inventories are being developed under the auspices of the aforementioned GEF-funded projects in China, India and Indonesia.

14. FAO, in collaboration with international and local partners, supported several activities on *in situ* conservation and on-farm management of PGRFA, in particular through the above-mentioned projects and GEF-funded projects in Cuba,<sup>26</sup> Ecuador,<sup>27</sup> Mauritania<sup>28</sup> and Peru,<sup>29</sup> with FAO again acting as the GEF implementing agency.<sup>30</sup> FAO also supported the conservation and use

<sup>14</sup> [www.fao.org/cgrfa/resources/news/detail-events/en/c/1629970/](http://www.fao.org/cgrfa/resources/news/detail-events/en/c/1629970/)

<sup>15</sup> FAO. 2017. *Voluntary Guidelines for the Conservation and Sustainable Use of Crop Wild Relatives and Wild Food Plants*. Rome. <https://www.fao.org/documents/card/en/c/8f366de9-08a8-42ad-aae1-4f8f6822420e/>

<sup>16</sup> FAO. 2019. *Voluntary Guidelines for the Conservation and Sustainable Use of Farmers' Varieties/Landraces*. Rome. doi.org/10.4060/CA5601EN

<sup>17</sup> CGRFA-16/17/Report Rev.1, paragraph 62; CGRFA-17/19/Report, paragraph 64.

<sup>18</sup> CGRFA-18/21/Report, paragraph 99.

<sup>19</sup> CGRFA-19/23/7.3, paragraphs 7-8.

<sup>20</sup> GCP /CPR/061/GFF: On-farm Conservation and Sustainable Use of Genetic Diversity of Crops originated in China (FSP).

<sup>21</sup> GCP /IND/183/GFF: Green-Agriculture: Transforming Indian agriculture for global environmental benefits and the conservation of critical biodiversity and forest landscapes (FSP).

<sup>22</sup> GCP /INS/804/GFF: Crop Diversity Conservation for Sustainable Use in Indonesia (PPG).

<sup>23</sup> GCP /MEX/305/GFF: Securing the Future of Global Agriculture in the face of climate change by conserving the Genetic Diversity of the Traditional Agroecosystems of Mexico (FSP).

<sup>24</sup> GCP /TAJ/021/GFF: Facilitating agrobiodiversity (ABD) conservation and sustainable use to promote food and nutritional resilience in Tajikistan.

<sup>25</sup> CGRFA-18/21/Report, paragraph 99.

<sup>26</sup> GCP /CUB/017/GFF: Introduction of new farming methods for the conservation and sustainable use of biodiversity, including plant and animal genetic resources, in production landscapes in selected areas of Cuba (FSP).

<sup>27</sup> GCP /ECU/105P/GFF: Conservación y uso sostenible de parientes silvestres de cultivos (PSC) y especies silvestres comestibles (ESC), bajo un marco institucional y desarrollo de iniciativas comunitarias rurales en Ecuador (PPG).

<sup>28</sup> GCP /MAU/001/GFF: Integrated ecosystem management program for the sustainable human development in Mauritania (FSP).

<sup>29</sup> GCP /PER/045/GFF: Sustainable management of agro-biodiversity and vulnerable ecosystems recuperation in Peruvian Andean regions through Globally Important Agricultural Heritage Systems (GIAHS) approach.

<sup>30</sup> GCP /TAJ/021/GFF: Facilitating agrobiodiversity (ABD) conservation and sustainable use to promote food and nutritional resilience in Tajikistan.

of local crops and varieties in Senegal (maize, horticultural species)<sup>31</sup> and Algeria, (medicinal and aromatic plants),<sup>32</sup> including the elaboration of an action plan to promote the sustainability of the initiatives.

## 2. *EX SITU* CONSERVATION

### A. Application of the Genebank Standards for Plant Genetic Resources for Food and Agriculture

15. As reported to the last session of the Governing Body, FAO, at the Commission's request,<sup>33</sup> developed and published 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.<sup>34</sup>

16. At the Commission's request, FAO, in collaboration with relevant international and national partners, including the CGIAR and the Global Crop Diversity Trust, also started work on additional practical guides, especially for the conservation in genebanks of species producing recalcitrant seeds, and for cryopreservation.<sup>35</sup> Following the Working Group's advice,<sup>36</sup> the Commission, at its last session, recommended that FAO convene a virtual expert consultation on the two new draft practical guides and develop them further based on the feedback received, for review by the Working Group at its next session.<sup>37</sup>

### B. Direct support to Members

17. FAO continues to support various *ex situ* conservation activities in several countries, including Armenia,<sup>38</sup> Azerbaijan,<sup>39</sup> Malawi,<sup>40</sup> Mongolia,<sup>41</sup> the Philippines,<sup>42</sup> Samoa<sup>43</sup> and Venezuela (Bolivarian Republic of).<sup>44</sup> For instance, in Malawi, 124 germplasm samples of local crops were collected, characterized and multiplied for conservation in the genebank and distribution for use in the appropriate agroecological zones of the country.

18. FAO also assisted in strengthening the operation of community seed banks in Peru<sup>45</sup> and in Southern Africa (Angola, Botswana, Malawi, Namibia, the United Republic of Tanzania and Zimbabwe),<sup>46</sup> the latter under the auspices of GEF's Dryland Sustainable Landscapes Impact

<sup>31</sup> GCP /SEN/803P/GFF: Land Degradation Neutrality for biodiversity conservation, food security and resilient livelihoods in the Peanut Basin and Eastern Senegal (Dékil Souf) (PPG).

<sup>32</sup> TCP/ALG/3802: Gestion durable des zones d'intérêts pour les plantes aromatiques et médicinales (ZIPAMs) dans les zones présahariennes et sahariennes.

<sup>33</sup> CGRFA-17/19/Report, paragraph 65.

<sup>34</sup> 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. <https://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. <https://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. <https://doi.org/10.4060/cc0025en>.

<sup>35</sup> CGRFA-18/23/Report, paragraph 100.

<sup>36</sup> CGRFA-19/23/7.1, paragraph 23.

<sup>37</sup> CGRFA-19/23/Report, paragraph 52.

<sup>38</sup> MDF fund.

<sup>39</sup> UTF/AZE/016/AZE: Catalysing the efficiency and sustainability of Azerbaijan's hazelnut sector.

<sup>40</sup> GCP /MLW/072/EC: KULIMA - Promoting farming in Malawi "Revitalising Agricultural Clusters and Ulimi wa Mmandanda through Farmer Field Schools in Malawi"

<sup>41</sup> TCP/MON/3902: Strengthening food safety and plant health protection systems.

<sup>42</sup> GCP/PHI/062/GFF: Dynamic conservation and sustainable use of agricultural biodiversity to ensure food security and ecosystems services and resiliency.

<sup>43</sup> TCP/SAM/3803: Building capacities on tissue culture to support & sustain biodiversity for food security & nutrition.

<sup>44</sup> TCP/VEN/3702/C2: Fortalecimiento de las potencialidades técnico-científica en producción de semillas de leguminosas vinculadas a la agricultura familiar y campesina.

<sup>45</sup> GCP /PER/045/GFF: Sustainable management of agro-biodiversity and vulnerable ecosystems recuperation in Peruvian Andean regions through Globally Important Agricultural Heritage Systems (GIAHS) approach.

<sup>46</sup> GCP /GLO/980/GFF: Global coordination project for the Dryland Sustainable Landscapes Impact Program.

Program in Southern Africa. These initiatives aim, *inter alia*, to improve the capacities of stakeholders in managing local crops and varieties, promote market-based incentive mechanisms, identify platforms for scaling up successes and promote the creation of an enabling policy environment.

### 3. SUSTAINABLE USE

19. As requested by the Commission, FAO continues assisting countries in strengthening national seed systems, including plant breeding, for the delivery of diverse and quality seeds and planting materials, in particular to meet the needs and priorities of smallholder farmers. It further assists countries, at their request, in collaboration with the International Treaty, in strengthening their capacity in crop improvement, including pre-breeding, in support of the implementation of the Second GPA and Article 6 of the Treaty.

#### A. Strengthening seed systems

20. FAO continues to support Members in the development of robust seed systems that included variety adoption, quality seed production and establishment of community seed enterprises. The aim is to ensure that farmers, in particular small-scale farmers, have sustained access to affordable quality seeds and planting materials of well-adapted, productive, and nutritious crop varieties that are resistant to biotic and abiotic stresses. In this regard, initiatives aimed at strengthening the seed delivery value chain have been implemented in multiple countries. These interventions entailed 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 strengthening seed certification systems. In addition, FAO continued to assist Members in the development of national seed policies, legislation, and regulations. More detailed information on FAO's support to the rehabilitation of seed systems is provided in the document *Implementation and review of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture*.<sup>47</sup>

21. At its last session, the Commission recommended that the FAO Council request FAO to continue assisting countries in strengthening national seed systems to facilitate the delivery of quality seeds and planting materials, in particular to smallholder farmers, adapted to their local conditions, preferences and needs. It further recommended that the FAO Council request FAO to continue supporting countries, at their request, in the development, revision and implementation of national seed policies and legislation, considering the Commission's Voluntary Guide for National Seed Policy Formulation<sup>48</sup> and call upon donors to support countries in this regard.<sup>49</sup>

#### B. Strengthening plant breeding

22. FAO continues to strengthen capacities for the development of well-adapted crop varieties suited to local agroecosystems and farming systems. In this regard, FAO supported, for example, the verification of the genetic identity of grapevine cultivars using molecular tools in Georgia<sup>50</sup> and the improvement of berries in the Republic of Moldova.<sup>51</sup> In Afghanistan, FAO supported the strengthening of soy production through enhanced access to early generation seeds and certified seed production.<sup>52</sup> Further activities are summarized in the document *Implementation and review of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture*.<sup>53</sup>

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<sup>47</sup> CGRFA-19/23/7.3, paragraphs 18-20.

<sup>48</sup> FAO. 2015. Voluntary Guide for National Seed Policy Formulation. Rome. <https://www.fao.org/3/i4916e/i4916e.pdf>

<sup>49</sup> CGRFA-19/23/Report, paragraph 54.

<sup>50</sup> GCP/GEO/011/EC: FAO support to the Georgian agricultural sector (ENPARD III).

<sup>51</sup> TCP/MOL/3608: Strengthening the capacity of smallholders in berry production.

<sup>52</sup> OSRO/AFG/009: Strengthening Soya Production and Food Systems in Afghanistan.

<sup>53</sup> CGRFA-19/23/7.3, paragraphs 34-38.

23. The Joint Centre of FAO and the International Atomic Energy Agency (IAEA) for Nuclear Techniques in Food and Agriculture (CJN) supported the design and implementation of 79 crop improvement-related national and regional Technical Cooperation Projects (TCPs) in over 100 countries. The outputs encompassed human capacity building, technology transfer, infrastructure upgrade and technical advice related to the efficient use of mutation breeding in crop improvement. Through the support to countries provided under these TCPs and CJNs, 72 new crop varieties were released during 2021–22. Additionally, through IAEA’s Coordinated Research Projects mechanism, CJN fostered collaboration among researchers from more than 50 institutions across 39 different countries through five crop improvement-themed collaborative projects. As of December 2022, the FAO/IAEA Mutant Variety Database held records of 3 400 mutant varieties, of 228 crop species, that had been released for cultivation in 72 countries.

24. At its last session, the Commission, recommended that the FAO Council request FAO to continue supporting countries, in close coordination with the International Treaty, in strengthening their crop breeding systems, including for underutilized crops, as well as their crop improvement capacity, including through the CGIAR Centres and other relevant partners. The Commission further recommended that the FAO Council request FAO to continue taking into account participatory approaches in supporting breeding efforts of locally adapted varieties to ensure sufficient availability of quality seeds for smallholder farmers.<sup>54</sup>

### C. Rehabilitation of seed systems

25. FAO supports countries in the rebuilding of agricultural production systems following disasters and strife, including through the provision of emergency seed relief. In collaboration with partners, it carries out seed security assessments in countries that require assistance with resuming crop production after crises.

26. Compared to previous years, a larger number of farmers from a wide range of countries, including countries in Europe, received assistance with quality seeds and planting materials as emergency relief. FAO provided emergency seed assistance to several countries affected by the conflict in Ukraine, including Armenia<sup>55</sup> and Lebanon,<sup>56</sup> where vulnerable farming households were provided with quality seeds of improved varieties of winter wheat, and the Republic of Moldova<sup>57</sup> and Ukraine, where the seeds of improved varieties of cereals and vegetables were distributed.<sup>58</sup> FAO provided access to quality seeds and planting materials of food crops to vulnerable smallholder farmers affected by diverse crises in over 70 Member Nations. The crises included drought, civil unrest, floods, tropical storms and the COVID-19 pandemic. More detailed information is given in the document *Implementation and review of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture*.<sup>59</sup>

### D. Effects of seed policies, laws and regulations

27. The Commission, at its last session, reviewed and revised a draft concept note for further research on the impact of seed policies, laws and regulations on farmers’ ability to access seeds and planting materials of diverse, locally adapted farmers’ varieties/landraces.<sup>60</sup> It recommended that the FAO Council request FAO, in collaboration with the International Treaty, to carry out further

<sup>54</sup> CGRFA-19/23/Report, paragraph 55.

<sup>55</sup> TCP/ARM/3901: Emergency agricultural inputs support to the most vulnerable smallholder farmers affected by the Ukraine conflict.

<sup>56</sup> TCP/LEB/3902: Emergency support to vulnerable smallholder farming households affected by the ongoing economic crisis in Lebanon

<sup>57</sup> TCP/MOL/3901: Emergency support to vulnerable smallholder farming households in Moldova caused by the Ukraine conflict.

<sup>58</sup> TCP/UKR/3901: Emergency Food Security and Livelihoods Assistance to Conflict Affected Households in Ukraine; OSRO/UKR/208/CHA Scaling Up Critical Seasonal Support to Agriculture Producers Ukraine; OSRO/UKR/201/BEL Emergency Food Security and Livelihoods Assistance to Conflict Affected People in Ukraine.

<sup>59</sup> CGRFA-19/23/7.3, paragraphs 27-31.

<sup>60</sup> CGRFA-19/23/Report, *Appendix D*.



work on the effects of seed policies, laws and regulations, based on the concept note, as revised by the Commission, subject to the availability of resources.<sup>61</sup>

28. With regard to further research on the impact of seed policies, laws and regulations, the Commission highlighted that FAO and the International Treaty explore the possibility of having further research conducted by appropriate external partners, who would involve stakeholders from different seed systems. The Commission recommended that the FAO Council request FAO to report, at the next session of the Commission, on how it followed up on a number of requests the Commission made at its last session, including on taking a bottom-up, demand-driven approach to seed security and promoting farmers participation in seed-related FAO activities.<sup>62</sup>

#### **4. BUILDING SUSTAINABLE INSTITUTIONAL AND HUMAN CAPACITIES**

29. Partnerships are a critical delivery mechanism for strengthening human and institutional capacities for the conservation and sustainable use of PGRFA especially in developing Member Nations. FAO's work in countries is facilitated through collaboration with various partners, including partners within the United Nations system, especially the World Food Programme, the International Fund for Agricultural Development and the World Meteorological Organization, in as well as the CGIAR Centres, the Global Crop Diversity Trust, the West and Central African Council for Agricultural Research and Development, the International Seed Federation and the International Seed Testing Association (ISTA). Networks are also key to effective collaboration among partners to improve efficiency in the implementation of the Second GPA.

##### **A. Capacity-building activities**

30. FAO, including through CJN, continues to implement multiple activities to strengthen relevant capacities in countries. At CJN, for example, capacity-building activities resumed in 2022 after the COVID-19 pandemic. During the year, 33 training courses were delivered to 704 researchers, of which 317 were women and 387 were men. Moreover, five fellows were given training on plant breeding at the Plant Breeding and Genetics Laboratory for various lengths of time in 2022. More information on capacity-building activities is provided in the document *Implementation and review of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture*.<sup>63</sup>

31. The Commission, at its last session, recommended that the FAO Council request FAO to continue to strengthen human and institutional capacities for PGRFA research and development, and call upon donors to make funds available to support countries in the implementation of the Second GPA, including through the development and implementation of national strategies for PGRFA, in close coordination with the International Treaty and its Funding Strategy.<sup>64</sup>

##### **B. National Focal Points**

32. The Commission's National Focal Points on PGRFA continue to play an important role in the work of the Commission, including in capacity development and the building of sustainable institutions. As of 30 September 2023, 140 countries have nominated National Focal Points. This reflects the high level of commitment to reporting on the state of the conservation and sustainable use of PGRFA. The National Focal Points play a critical role in reporting on the implementation of the Second GPA and on SDG Indicator 2.5.1a, which contributes to periodic global assessments.

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<sup>61</sup> CGRFA-19/23/Report, paragraph 60.

<sup>62</sup> CGRFA-19/23/Report, paragraph 61.

<sup>63</sup> CGRFA-19/23/7.3, paragraphs 21-26.

<sup>64</sup> CGRFA-19/23/Report, paragraph 56.

### C. World Information and Early Warning System on Plant Genetic Resources for Food and Agriculture

33. WIEWS data are used to report on the implementation of the Second GPA and for the preparation of reports on the state of the world's PGRFA.<sup>65</sup> FAO also continues reporting, on an annual basis, on the status of progress towards SDG Target 2.5.

34. The Commission, at its last session, recommended that the FAO Council request FAO, subject to the availability of the necessary funds, to continue to report annually on the status of implementation of SDG Target 2.5, further develop the World Information and Early Warning System on Plant Genetic Resources (WIEWS), including through improved graphical features and reports, and strengthen cooperation with the International Treaty's Global Information System for PGRFA (GLIS)<sup>66</sup> and with Genesys,<sup>67</sup> with a view to avoiding duplication of efforts. It recommended that the FAO Council request FAO to revise and simplify the WIEWS Reporting Tool and indicators on which countries shall report, once the Second GPA has been reviewed, for the consideration of the Working Group and the Commission.

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

35. 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.

36. As previously reported to 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.<sup>68</sup> 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.<sup>69</sup> At its Eighteenth Regular Session in September 2021, the Commission agreed to extend the deadline for country reporting on the state of PGRFA to the end of 2021.

37. The draft Third Report, as contained in document IT/GB-10/23/16.1/Inf.2, draws on contributions from 127 countries. A total of 105 countries provided reports on the implementation of the Second GPA for the reporting period January 2012 to December 2019. A total of 115 countries provided reports on SDG Indicator 2.5.1a (Figure 1). *Ad hoc* reports on the implementation of the Second GPA were received from 12 international centres. Reports from 13 international and four regional genebanks on SDG Indicator 2.5.1a complemented the information provided by countries.

38. The Third Report is based on six different types of information:

- i. data on the implementation of the Second GPA provided by 105 countries, in particular:
  - 90 countries for the period January 2012 to June 2014 (reporting undertaken in 2015–2017); and
  - 94 countries for the period July 2014 to December 2019 (reporting undertaken in 2020–2021);

<sup>65</sup> CGRFA-19/23/7.2; CGRFA-19/23/7.2/Inf.1.

<sup>66</sup> [glis.fao.org/glis/](http://glis.fao.org/glis/)

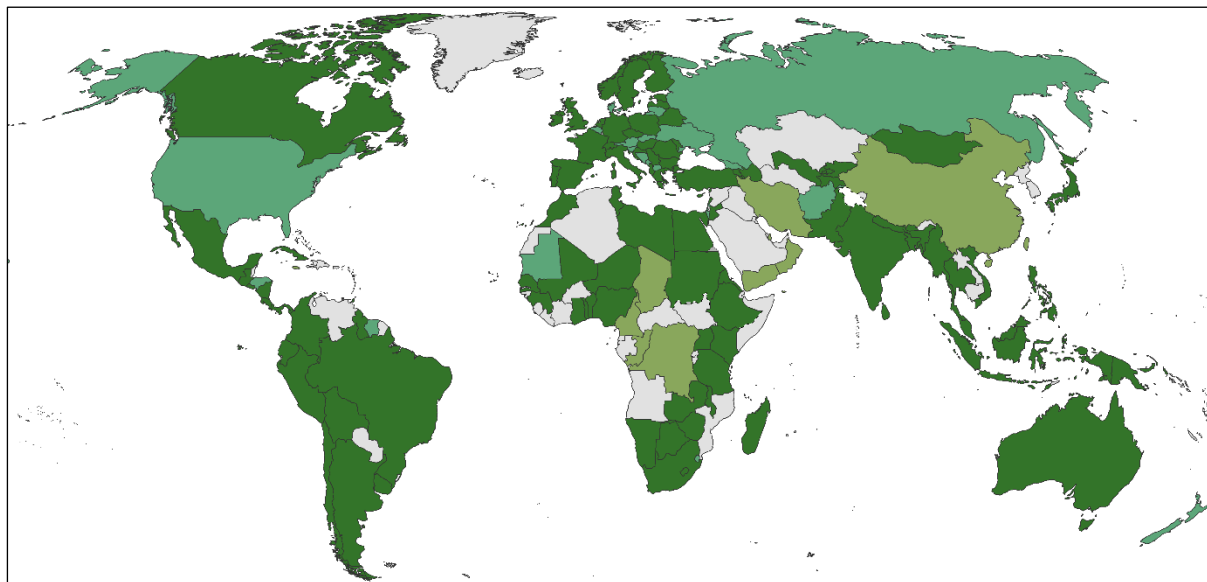
<sup>67</sup> [www.genesys-pgr.org/](http://www.genesys-pgr.org/)

<sup>68</sup> IT/GB-8/19/15.1/Inf.1, paragraph 9.

<sup>69</sup> CGRFA-17/19/Report, paragraph 69.

- ii. summative narratives provided by 84 countries (reporting undertaken in 2021);
- iii. ad hoc reports on the implementation of the Second GPA provided by 12 international agricultural research centres;
- iv. data on SDG Indicator 2.5.1a reported annually by countries and regional and international research centres during 2016–2021;
- v. thematic background studies commissioned by FAO; and
- vi. other relevant information.

Figure 1. Countries that contributed to the preparation of the draft Third Report



Notes: Countries shown in dark green reported on the implementation of the Second GPA and SDG Indicator 2.5.1a. Countries shown in light green reported on the implementation of the Second GPA only. Countries marked in blue green reported only on the implementation of SDG 2.5.1a. The boundaries and names shown, and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Dotted line represents approximately the Line of Control in Jammu and Kashmir agreed upon by India and Pakistan. The final status of Jammu and Kashmir has not yet been agreed upon by the parties. The final boundary between the Republic of Sudan and the Republic of South Sudan has not yet been determined.

39. The Commission, at its last session, considered the status of preparation of the draft Third Report and took note of the draft Third Report. The Commission recommended that information on gaps in data from national reports on the implementation of the Second GPA be included in the report. It recommended that for the different topics discussed therein, the number of reporting countries be made explicit and general statements about changes be substantiated with quantitative data and references. It further recommended that a section on key findings be included in each chapter.

40. The Commission noted that Members and observers may provide inputs to, and comments on, the draft Third Report in writing by 30 November 2023. It further requested that the draft Third Report also be made available to the Tenth Session of the Governing Body of the International Treaty for its comments and inputs. In addition, the draft thematic background studies should also be made available for review by Members and observers. A revised draft Third Report, reflecting the findings of the thematic background studies and taking into account comments and inputs received from Members, observers and the Governing Body of the International Treaty, should be made available to Members during the first half of 2024 for further comments within a timeframe of 30 days.<sup>70</sup>

<sup>70</sup> CGRFA-19/23/Report, paragraphs 45-46.

41. Preliminary findings of the draft Third Report are given in the *Appendix* to the current document. The finalized Third Report will be made available in due time for the Twelfth Session of the Working Group.

## V. REVIEW OF THE SECOND GLOBAL PLAN OF ACTION FOR PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

42. The Commission, at its last session, recommended that the FAO Council request FAO to review and revise, as appropriate, the Second GPA, based on the findings of the Third Report and taking into account the gaps, needs and priorities identified through regional consultations, and invite the Governing Body of the International Treaty to participate in the updating process. The Commission recommended that sufficient time for discussion be allocated to PGRFA-related issues and, in particular, to the revision of the Second GPA at the next session of the Working Group.<sup>71</sup>

43. Governments and international organizations are invited to make available the financial resources necessary for updating the Second GPA, including for the regional consultations.<sup>72</sup>

## VI. AQUATIC GENETIC RESOURCES FOR FOOD AND AGRICULTURE

44. 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.<sup>73</sup>

45. The Commission, at its last session, welcomed the adoption by the Council and the publication of the Global Plan of Action for the Conservation, Sustainable Use and Development of Aquatic Genetic Resources for Food and Agriculture<sup>74</sup> and expressed its appreciation for the activities undertaken by FAO in support of its implementation. The Commission also welcomed the ongoing development of AquaGRIS, FAO's global information system for aquatic genetic resources for food and agriculture.<sup>75</sup>

## VII. FOREST GENETIC RESOURCES

46. The Commission, at its last session, considered the status of preparation of the Second Report on the State of the World's Forest Genetic Resources (Second Report) and took note of the *Draft Second Report on the State of the World's Forest Genetic Resources*.<sup>76</sup>

47. The Commission recommended that the FAO Council request FAO to prepare, by 1 October 2023, a revised draft of *The Second Report on the State of the World's Forest Genetic Resources* (Second Report), including a more profound analysis of the data provided by countries. It further recommended that the FAO Council request FAO to invite Members and observers to provide comments on the revised draft Second Report by 30 November 2023. The Commission recommended that the FAO Council request FAO to then finalize the Second Report, taking into account all comments received, and publish it by 30 June 2024, with an in-brief version in all the official languages of FAO.

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<sup>71</sup> CGRFA-19/23/Report, paragraph 58.

<sup>72</sup> See CGRFA-19/23/7.3, Table 2.

<sup>73</sup> FAO. 2022. *The State of World Fisheries and Aquaculture 2022. Towards Blue Transformation*. Rome, FAO. doi.org/10.4060/cc0461en

<sup>74</sup> 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

<sup>75</sup> CGRFA-19/23/Report, paragraphs 111-115.

<sup>76</sup> CGRFA-19/23/8.2/Inf.1.

48. Furthermore, the Commission recommended that the FAO Council request FAO to present the Second Report at relevant international meetings and actively disseminate its findings to inform global processes on biodiversity, climate change, forests and ecosystem restoration.

49. The Commission, in addition, invited Members to make full use of the findings of the Second Report in the development and implementation of relevant policies and actions, as appropriate, and keep their nominations for the National Focal Points and possible alternates up to date.<sup>77</sup>

## VIII. BIODIVERSITY FOR FOOD AND AGRICULTURE

50. 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.

51. The Commission, at its Eighteenth Regular Session, endorsed, in response to the report on *The State of the World's Biodiversity for Food and Agriculture*,<sup>78</sup> the *Framework for Action on Biodiversity for Food and Agriculture* (FA BFA).<sup>79</sup> Subsequently, the Framework was endorsed by the Council.<sup>80</sup>

52. At its last Session, the Commission considered the implementation of the FA BFA in the context of the Kunming-Montreal Global Biodiversity Framework (KM GBF)<sup>81</sup> and the FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors.<sup>82</sup> The Commission welcomed the adoption of the KM GBF and endorsed a draft Resolution for consideration and adoption by the Council at its 174th Session.<sup>83</sup> It noted with satisfaction the high degree of mutual supportiveness of the KM GBF and the FA BFA and the different Global Plans of Action (GPAs) developed by the Commission and recommended considering, at this stage, no amendments to the FA BFA, while continuing to encourage Members and the Commission to continue to review the FA BFA. However, it invited Members to implement the FA BFA and the GPAs in harmony with the KM GBF, including by integrating the implementation of the FA BFA and the GPAs into national policies and actions plans on the conservation and sustainable use of biodiversity, including National Biodiversity Strategies and Action Plans (NBSAPs), as appropriate, and requested the Secretariat to support countries in this regard, including by assisting in mobilizing the necessary resources.

53. The Commission recommended that the FAO Council request FAO to contribute to the development of tools and guidelines, as appropriate, facilitating the implementation of the FA BFA, the GPAs and the KM GBF in a mutually supportive, coherent, consistent and non-duplicative way, for consideration by relevant subsidiary bodies of the Commission and by the Commission itself. It further encouraged Members to make use of financial and other support available for the implementation of activities supporting the implementation of the two frameworks and the GPAs.

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<sup>77</sup> CGRFA-19/23/Report, paragraphs 63-66.

<sup>78</sup> FAO. 2022. *Framework for Action on Biodiversity for Food and Agriculture*. FAO Commission on Genetic Resources for Food and Agriculture. Rome. <https://doi.org/10.4060/cb8338en>

<sup>79</sup> CGRFA-18/21/Report.

<sup>80</sup> CL 168/REP, paragraphs 34-42..

<sup>81</sup> CBD/COP/DEC/15/4.

<sup>82</sup> FAO. 2020. *FAO Strategy on Mainstreaming Biodiversity across Agricultural Sectors*. Rome. [doi.org/10.4060/ca7722en](https://doi.org/10.4060/ca7722en)

<sup>83</sup> CL 174/13, *Appendix C*.

54. In addition, the Commission recommended that monitoring of the implementation of the FA BFA build on existing indicators, including those developed under the aegis of the Commission and those currently being developed for the KM GBF.

55. The Commission took of the series regional workshops scheduled for 2023/24 to support the implementation of the FA BFA in Africa, Asia, Latin America and the Caribbean and Near East and North Africa. It called upon its Members to reconfirm or update information concerning their National Focal Points for BFA as soon as possible. The first regional workshop, *Taking Action on Biodiversity for Food and Agriculture in Latin America and the Caribbean*, was held in collaboration with the FAO Regional Office for Latin America and the Caribbean and the International Federation of Beekeepers' Associations (Apimondia) from 11 to 13 September in Santiago, Chile.<sup>84</sup>

## IX. CROSS-SECTORAL MATTERS

56. The Commission remains committed to addressing cross-cutting issues, 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 biodiversity for food and agriculture (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.

### 1. THE ROLE OF GENETIC RESOURCES FOR FOOD AND AGRICULTURE IN MITIGATION OF AND ADAPTATION TO CLIMATE CHANGE

57. The Commission, at its last session, reviewed and simplified draft questionnaires on GRFA and climate change.<sup>85</sup> At the time of writing, the circulation of the questionnaire to National Focal Points to the Commission is under preparation. A summary of responses to the questionnaire will be made available for consideration by the Intergovernmental Technical Working Groups (Working Groups) and the Commission at their next sessions.

58. The Commission requested the Secretariat to convene, after the completion of the questionnaire, a global multistakeholder workshop on climate change and GRFA, subject to the availability of the necessary funds. The workshop should aim to exchange information and experiences, including on prebreeding and breeding programmes directed towards adaptation, resilience and mitigation traits, share views and priorities, taking into account the responses to the questionnaire, and discuss possible changes to the Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning<sup>86</sup> for consideration by the Commission at its Twenty-first Regular Session.

59. The Commission further stressed the importance of continuing to increase capacity-building and training programmes on climate change adaptation and mitigation, in collaboration with existing intergovernmental and international bodies, with regard to all GRFA and within the broad framework of relevant global policies and strategies, including the FAO Strategy on Climate Change 2022–2031.<sup>87</sup>

60. The Commission invited 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), as appropriate.

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<sup>84</sup> [www.fao.org/americas/eventos/ver/es/c/1647110/](http://www.fao.org/americas/eventos/ver/es/c/1647110/)

<sup>85</sup> CGRFA-19/23/Report, *Appendix B*.

<sup>86</sup> FAO. 2015. *Voluntary Guidelines to Support the Integration of Genetic Diversity into National Climate Change Adaptation Planning*. Rome. <http://www.fao.org/documents/card/en/c/290cd085-98f3-43df-99a9-250cec270867>

<sup>87</sup> FAO. 2022. *FAO Strategy on Climate Change 2022–2031*. Rome. <https://www.fao.org/3/cc2274en/cc2274en.pdf>

## 2. ACCESS AND BENEFIT-SHARING FOR GENETIC RESOURCES FOR FOOD AND AGRICULTURE

61. The Commission, at its last session, welcomed Goal C and Target 13 of the KM GBF and stressed their importance for the global exchange of GRFA. The Commission requested the Secretariat to continue monitoring developments regarding ABS in other fora, including the World Intellectual Property Organization (WIPO) and the International Union for the Protection of New Varieties of Plants (UPOV), with a view to considering their potential implications, including potential opportunities and challenges for the Commission and its Members.

62. The Commission took note of the typology of ABS country measures<sup>88</sup> and requested the Secretariat to finalize the document and make it available on the Commission's website, keeping in mind that this is a living document, which should be periodically updated, as needed. It further requested the Secretariat to document examples of entire ABS country measures that accommodate the distinctive features of GRFA, which could be presented as a stand-alone product or appended to the typology of country measures.

63. The Commission requested the Secretariat to further simplify and finalize a draft questionnaire<sup>89</sup> and to prepare, based on the responses received and other available sources of information, a report on the implications of the implementation of ABS country measures for the use and exchange of GRFA, associated traditional knowledge and the fair and equitable sharing of benefits, for review by the ABS Expert Team by electronic means.

64. Furthermore, the Commission requested the Secretariat to contribute to the process of developing indicators for the KM GBF to monitor monetary and non-monetary benefit-sharing, aiming to ensure that the distinctive features of GRFA are taken into account.

65. The Commission requested the Secretariat to continue to raise awareness of, and enhance capacity to deal with, matters related to ABS to support the development and implementation of ABS arrangements that accommodate the distinctive features of GRFA.

## 3. DIGITAL SEQUENCE INFORMATION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

66. The Commission, at its last session, requested the Secretariat to finalize the *Draft study on the role of digital sequence information in the conservation and sustainable use of genetic resources for food and agriculture: Opportunities and challenges*<sup>90</sup> and bring it, through the respective Secretariats, to the attention of the CBD Ad Hoc Open-ended Working Group on Benefit-sharing from the Use of Digital Sequence Information on Genetic Resources and the Ad Hoc Working Group to Enhance the Functioning of the Multilateral System, re-established under the International Treaty. At the time of writing the study is being finalized.

67. The Commission also noted that there is still no internationally agreed definition of digital sequence information (DSI) nor agreement on the term to be used. It took note of recent developments on DSI in other fora and welcomed Decision 15/9 of the Conference of the Parties to the CBD to establish, as part of the KM GBF, a multilateral mechanism for benefit-sharing from the use of DSI on genetic resources, including a global fund.

68. It recommended that the FAO Council request FAO to assist countries in building the necessary capacities to make use of DSI in research and development related to GRFA. Furthermore, it welcomed initiatives that support engagement at the international level on the work of DSI.

69. The Commission requested the Secretariat, building on previous work and avoiding duplication, to invite Members to submit information on domestic ABS measures applying to DSI and their actual or potential implications for the conservation and sustainable use of GRFA,

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<sup>88</sup> CGRFA-19/23/4.2/Inf.1.

<sup>89</sup> CGRFA-19/23/4.2/Inf.2.

<sup>90</sup> CGRFA-19/23/5/Inf.1.

including their exchange, access to them and the fair and equitable sharing of the benefits arising from their use, and to compile this information for the Commission.

70. It encouraged Members to coordinate future work on DSI, including ABS for DSI, among relevant sectors, with a view to ensuring consistency and mutual supportiveness of the ongoing processes in different fora.

71. The Commission further requested the Secretariat to continue monitoring developments regarding DSI in other fora, and participate where relevant, with a view to considering their implications, including potential opportunities and challenges for the Commission and its Members. It further requested the Secretariat to closely engage with the unfolding processes under the CBD, as well as in other bodies, to ensure that the distinctive features of GRFA requiring distinctive solutions for ABS are appropriately reflected in the development of relevant rules and mechanisms for the sharing of benefits from the use of DSI on genetic resources.

72. The Commission requested the Secretariat to continue to hold, subject to the availability of resources, in collaboration with the Secretariats of the CBD, the International Treaty and other relevant international organizations, virtual and/or in-person open-ended workshops on DSI, as appropriate, with a view to sharing information about gaps in knowledge and technical capacity-building needs and activities related to DSI on GRFA.<sup>91</sup>

#### **4. REVIEW OF WORK ON BIODIVERSITY, NUTRITION AND HUMAN HEALTH**

73. The Commission, at its last session invited Members to raise awareness of, adopt and implement, the Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans of Action on Nutrition,<sup>92</sup> including through capacity development.

74. It further invited Members to integrate GRFA into their food security and nutrition policies, including public research and extension programmes, public procurement and education policies, and market and value chain development, with the aim of arriving at policies that support healthy diets through sustainable food systems, food security, adequate nutrition, resilience to climate change and the conservation and sustainable use of GRFA.

75. The Commission invited Members and relevant stakeholders to undertake research and raise awareness on the nutrient composition of foods derived from different varieties of plants and breeds of animals as well as foods from wild, neglected and underutilized species among others, including for biofortification and taking into consideration knowledge from Indigenous Peoples.

76. Moreover, it invited Members and relevant stakeholders from multiple sectors and with multiple forms of expertise to consider sustainable use of BFA and GRFA across the various work areas of the One Health approach.

77. The Commission recommended that the FAO Council request FAO to continue collaborating with its partners to raise awareness and increase knowledge of Members on nutrition and healthy diets from sustainable food systems and their related metrics and indicators, and on the interconnection among plant, animal and human health, and raising awareness of the importance of genetic diversity and BFA.

78. It further recommended that the FAO Council request FAO to strengthen its support to Members in their efforts to promote food security, healthy diets from sustainable food systems, improved nutrition and the One Health approach through the conservation and sustainable use of BFA and GRFA.

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<sup>91</sup> CGRFA-19/23/Report, paragraphs 27-33.

<sup>92</sup> FAO. 2016. *Voluntary Guidelines for Mainstreaming Biodiversity into Policies, Programmes and National and Regional Plans of Action on Nutrition*. Rome. <https://www.fao.org/documents/card/en/c/68b200ba-928a-4db9-a6ac-6b8fdc3c464b/>



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**APPENDIX**

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**PRELIMINARY KEY FINDINGS OF THE  
DRAFT THIRD REPORT ON THE STATE OF THE WORLD'S PLANT GENETIC  
RESOURCES FOR FOOD AND AGRICULTURE**

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1. The Commission's decision to fully integrate the process of monitoring the implementation of the Second GPA with the preparation of the Third Report<sup>93</sup> is reflected in the structure of the Third Report, as agreed by the Commission at its Fifteenth Regular Session.<sup>94</sup> The Third Report, in reflecting the structure of the Second GPA and its 18 Priority Activities, covers the four key areas of the Second GPA and identifies related gaps and needs in these areas:

- (1) The state of *in situ* conservation and management;
- (2) The state of *ex situ* conservation;
- (3) The state of sustainable use;
- (4) The state of human and institutional capacities.

**(1) The state of *in situ* conservation and management**

2. The conservation and management of PGRFA *in situ* and on-farm allows evolution and adaptation processes to continue in their natural or usual environments. With increasingly rapid changes in land use, climate and other factors that threaten PGRFA diversity, the need to conserve PGRFA in the wild and on-farm has gained increasing recognition. The first chapter of the Third Report addresses the current state of conservation and management of PGRFA *in situ* and on-farm based on reports from 96 countries. The chapter also discusses assistance provided to farmers in disaster situations and the impact that such emergency assistance has on PGRFA diversity. It also summarizes threats, challenges, gaps and needs related to *in situ* conservation and on-farm management.

*Surveying and inventorying PGRFA*

3. Over the reporting period, important advances were made in the number of surveys and inventories of PGRFA undertaken in the wild and on-farm. A total of 81 countries reported that about 6 000 species were surveyed, 45 percent of which are used for food, 17 percent are crop wild relatives (CWRs) and 6 percent are wild food plants. Among the species surveyed, about 39 percent were reported to be under threat in specific areas, affected particularly by climate change, overexploitation and changes in land use. In addition, about 7 percent of the 107 000 farmers' varieties/landraces (FV/LRs) surveyed were reported to be threatened. Typical threats to FV/LRs as reported include climate change, overexploitation, changes in land use and replacement by improved varieties.

*In situ conservation of crop wild relatives and wild food plants*

4. Based on Protected Plant data,<sup>95</sup> protected *in situ* conservation sites increased during the reporting period by 14 percent to almost 13 million km<sup>2</sup> in the 69 reporting countries. CWRs and wild food plants were mainly conserved passively, as only 10 percent of *in situ* conservation sites in the reporting countries had management plans specifically addressing the conservation of these important plant groups. In this regard, many countries highlighted that suboptimal collaboration among relevant ministries is limiting the effective conservation of CWRs and wild food plants, whose management requires highly specialized expertise, *inter alia* in taxonomy. Almost all

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<sup>93</sup> CGRFA-14/13/Report, paragraph 101.

<sup>94</sup> CGRFA-15/15/Report, *Appendix F*.

<sup>95</sup> [www.protectedplanet.net/](http://www.protectedplanet.net/)

reporting countries reported that activities relating to the conservation of wild PGRFA were primarily provided by national governments and through projects.

5. A diverse range of *in situ* activities were reported, including the implementation of management practices that maintain high levels of genetic diversity, involvement of local communities, arrangements for *ex situ* conservation of threatened and endangered populations and plans for encouraging public participation.

#### *On-farm management and improvement of PGRFA*

6. During the reporting period, the number of programmes, projects and activities addressing on-farm conservation and management of FV/LRs increased, including those on the assessment of environmental and socioeconomic features and farmers' knowledge of on-farm PGRFA management, those of the characterization of FV/LRs and those on participatory plant breeding. In addition, community-based approaches for managing local crop diversity, such as community seed banks were adopted in a number of countries. The country reports indicate that, at least in some countries, farmers are increasingly involved in research and training activities. Complementing these efforts, capacity-development and marketing initiatives targeting farmers and other stakeholders with the aim of enhancing on-farm management of PGRFA seem to be on the rise in an increasing number of countries.

#### *Restoration of crop systems after disasters*

7. With the increasing frequency and severity of erratic extreme weather events and the increasing incidence of pests and diseases – and because of civil unrest or war – demand for seed aid to restart crop production after crises seems to have risen considerably during the reporting period. Quality seeds and planting materials were distributed to farmers and communities as part of emergency aid in almost 500 interventions in 49 countries. Most of the countries that reported such interventions following disasters are in Africa, while the highest number of interventions was reported by countries in Latin America and the Caribbean. One major difficulty in such situations is the lack of availability of quality seeds and planting materials of adapted varieties from local or nearby sources.

#### *Gaps and needs*

8. A lack of coordination among ministries of agriculture, forestry and the environment is a major constraint in some countries, often leading to ineffective conservation activities, which could increase the risk of genetic erosion of CWRs and wild food plants. To improve complementarity among *in situ* conservation, on-farm management and *ex situ* conservation, it is essential to strengthen linkages between genebanks and other stakeholders. Participatory variety selection and plant breeding with farmers should be strengthened to increase the adoption of well-adapted quality seeds and planting materials through close cooperation between breeders, genebanks, farmers and community seed banks. Human capacity is another limiting factor and urgently needs to be addressed to ensure an adequate cadre of specialized staff, including taxonomists. The impacts of emergencies on the agricultural sector are often estimated in terms of monetary and nutritional costs. However, many of the reporting countries recognized that there is a gap in terms of the assessment of the impact of disasters on crop diversity. The identification of reliable sources of materials is another challenge. The germplasm distributed to farmers after disasters may not always be fully adapted to local conditions or the cultural environment.

### **(2) The state of *ex situ* conservation**

9. *Ex situ* conservation safeguards PGRFA in a controlled environment and facilitates access by stakeholders. *Ex situ* conservation also has the advantage of providing a safety backup for material conserved and managed *in situ* and on-farm. The second chapter of the Third Report addresses *ex situ* conservation efforts worldwide and focuses predominantly on materials maintained in genebanks.

### *Overview of ex situ collections*

10. Germplasm holdings of over 5.8 million accessions are conserved under medium- and long-term storage conditions in the base collections of 827 national genebanks in 115 countries, four regional genebanks and 13 international genebanks. This represents a 17 percent increase over the base collections reported in 2009. The biological status of the germplasm conserved is documented for 71 percent of the accessions reported; about 1 427 000 are FV/LRs, and 716 000 are wild materials, of which approximately 541 000 accessions are CWRs and 45 000 are wild food plants. The remaining accessions are improved varieties and breeding materials. The country of origin is known for approximately 69 percent of the accessions. The crop groups with the largest numbers of accessions conserved are the major food crops, including cereals, pulses, roots and tubers, and vegetables. The vast majority (79 percent) of accessions are conserved as seed, followed by conservation in fields and *in vitro*.

### *Safety duplication of stored material*

11. At the end of 2021, approximately 35 percent of *ex situ* holdings were safety duplicated, a significant increase from the 10 percent that were safety duplicated in 2015. More than half of the safety-duplicated holdings were deposited at the Svalbard Global Seed Vault (SGSV), demonstrating that countries are increasingly taking advantage of the SGSV as a long-term black-box storage facility. However, there is still a need to provide a sustainable, long-term cryostorage backup for species that are vegetatively propagated or produce recalcitrant seeds.

### *Redundancy within and between collections and the uniqueness of germplasm accessions*

12. Continued rationalization efforts have resulted in some progress at country level and in international genebanks with regard to unwanted duplications. However, redundancy within and among collections has remained poorly documented overall and requires continued attention. A number of species (e.g. *Uapaca kirkiana*, *Persea schiedeana*, *Dioscorea rotundata*, *Ensete ventricosum*, *Citrullus amarus*, *Piper aduncum* and *Vigna minima*) are conserved in only one or very few genebanks, which is a concern given that failure to conserve the material in those genebanks could mean complete loss.

### *Acquisition of germplasm*

13. Between 2012 and 2019, almost 250 000 samples were collected by 366 institutes in 87 reporting countries. A number of countries reported having strategies for targeted collections, including for addressing missing genetic diversity and ecogeographic coverage, incomplete coverage of targeted taxa, including CWRs, and trait-specific gaps, such as resistance to pests and diseases. Although acquisition of germplasm through collecting has improved, many genebanks could still benefit from more and better-targeted collecting based on gap analyses. Despite renewed interest in the acquisition of CWRs, collecting wild species often fails because of the unavailability of staff specialized in relevant disciplines such as taxonomy and phenology.

### *Germplasm health*

14. Germplasm health issues seem to be receiving increasing attention in the conservation, distribution and use of PGRFA. The increasing movement of germplasm within and between countries and continents increases the risk that pests and diseases will spread. Overall, awareness of these issues seems to have improved during the reporting period, as does the actual management of germplasm health issues. However, a number of national genebanks still do not have the human and financial resources needed to properly monitor germplasm health, a deficiency that greatly affects germplasm exchange.

### *Regeneration*

15. Regeneration remains one of the main challenges for many countries and genebanks. Approximately one-third of the accessions reported by countries were regenerated between 2012

and 2019, while 24 percent are in need of regeneration. In particular, the regeneration of CWRs and out-crossing species is problematic for many genebanks.

#### *Documentation*

16. Although documentation has been highlighted as an essential part of genebank management for many years, and despite the support provided in this regard, including by the Crop Trust, many countries still lack genebank management information systems and thus struggle to document passport and other genebank-management data. With the increasing availability of improved open-source software for managing genebank data, for example the new Grin-Global Community Edition, the situation shows signs of improvement. Standardized passport data and data object identifiers (DOIs) are increasingly being used in germplasm exchange and for cross-referencing germplasm in publications. Greater efforts to train data specialists and genebank managers on the adoption and use of these improved systems are still needed.

#### *Germplasm movement*

17. National genebanks in 87 countries distributed almost 1.3 million accessions between 2012 and 2019, with well over 90 percent distributed within the respective country. The main recipients included national agricultural research centres, farmers, NGOs and the private sector.

#### *Gaps and needs*

18. Notwithstanding the achievements and advances made over the past ten years, many of the issues that impede the efficient and effective conservation of PGRFA still remain to be addressed. *Ex situ* conservation of PGRFA still lacks the necessary political and financial support in many countries, which often results in limited or sporadic funding, lack of sufficiently qualified staff and insufficient infrastructure and logistics. Key activities, such as viability testing, regeneration and safety duplication, continue to suffer from this lack of support. In addition, several national genebanks do not have the human and/or technical capacity needed to adequately address germplasm-health issues.

19. Existing regional genebanks provide a model for the type of collaboration that could help to support national programmes by coordinating and pooling resources for training, backup storage and collaboration in essential activities, such as viability and germplasm-health testing, regeneration and characterization, including molecular characterization. Although this approach could result in cost efficiencies, it would require political commitment and coordination. Collaboration with universities, other research institutes and the private sector could also benefit the conservation and sustainable use of PGRFA.

### **(3) The state of sustainable use**

20. During the reporting period, progress was made in the sustainable use of PGRFA, in particular in the following areas: the promotion of diverse farming systems; research on PGRFA; plant breeding; broadening the genetic base of crops through prebreeding; utilization of local and locally adapted crops, varieties and underutilized species; on-farm diversity; and the release of crop varieties and seed delivery systems.

#### *Characterization, evaluation and specific subsets of collections*

21. Country data indicate a significant increase in the number of accessions characterized as well as progress in the development of thematic collections for traits of interest, and this has increased understanding of germplasm collections and hence improved their exploitation. Recent advances in biotechnologies, especially next-generation sequencing and high-throughput phenotyping, are increasingly being used to enhance efficiencies in germplasm characterization and evaluation. However, not all countries have access to the relevant technologies, and many countries lack the capacity to make use of them. Better collaboration, capacity-building and technology

transfer are needed in order to ensure that all countries can fully benefit from the diversity of PGRFA.

22. Because of suboptimal information and data-management systems, most of the existing characterization and evaluation data are not publicly available. Moreover, the continuing lack of sufficient characterization and evaluation data means that targeted selection of accessions with specific traits is often not feasible. There is a lot of room for improvement in this regard.

#### *Plant breeding, genetic enhancement and base-broadening*

23. Over 350 national research organizations from 76 countries reported the use of prebreeding, i.e. the introgression of novel traits from non-adapted materials into breeding populations, for a total of 322 crop species. While prebreeding activities took place in all regions during the reporting period, it seems that they have not yet become a routine crop-improvement strategy, which suggests that there is a largely unused opportunity for strategic collaboration between genebank managers and breeders.

24. Eighty-seven countries reported breeding activities addressing almost 500 crop species belonging to all major crop groups. Yield continues to be the most sought-after trait in crop breeding programmes. However, resistance to biotic and abiotic stresses – especially as a climate change adaptation strategy – and quality traits for enhanced nutrition are also frequently cited as breeding objectives. The number of countries that reported farmer participatory plant breeding was more than double the number at the time the Second Report was prepared.

25. In addition to the important advances made in high-throughput and low-cost genotyping, in particular in genome sequencing, significant advances in morphological and biochemical characterization of plants also provide new opportunities. Country data indicate an upsurge in the use of modern plant breeding techniques, in particular genomic selection and the more recent genome editing technology, including CRISPR/Cas9, during the reporting period.

#### *Diversification of crop production*

26. Activities involving an increase of intraspecific and/or interspecific diversity in crop production systems were reported by 73 countries. In some instances, the diversification of cropping systems is coupled with enhancement of the adaptability of FV/LRs through the introgression of resistance traits. In addition to paying increased attention to mixed cropping and crop rotation, diversification initiatives increasingly focus on the introduction of new crops, the reintroduction of crops and the domestication of wild species.

#### *Development and commercialization of farmers' varieties/landraces and underutilized species*

27. Countries reported various measures aimed at enhancing the cultivation of FV/LRs and promoting their development and commercialization. Almost 500 FV/LRs were registered in 29 countries across all regions during the reporting period. Most of them were registered during the last two years of the reporting period (2018–2019), which reflects the resurgent interest in FV/LRs and growing opportunities to market them. This development contrasts with the progressive discontinuation of the cultivation of many FV/LRs, perhaps reflecting the declining number of farmers and the concomitant loss of knowledge of FV/LRs as well as the abandonment of marginal cropping areas.

28. A total of nearly 1 400 programmes on research, crop improvement, processing, public awareness, seed distribution, market development, and policy changes for FV/LRs and underutilized crops or species were reported by 75 countries. Of these, 412 programmes were considered specific to FV/LRs, and 159 specifically target underutilized crops or species.

#### *Strengthening seed systems*

29. Informal and formal seed systems co-exist in all countries. Forty countries, more than two-thirds of them developing countries, reported that there had been improvements in their seed

systems between 2012 and 2019, and this facilitated the adoption by farmers of the most suitable crop varieties. Globally, the volume of the global seed market increased in value from USD 36 billion in 2007 to over USD 50 billion in 2020.

#### *Gaps and needs*

30. Despite progress in characterization, the limited availability of trait-specific subsets continues to constrain the use of PGRFA in research and plant breeding. Modern biotechnologies and molecular genetic tools remain too costly for regular use in crop breeding in many national programmes, which are often insufficiently funded even to provide the capacities needed for traditional breeding.

31. The cost of quality seeds of suitable crop varieties remains an important constraint to their wider use in many developing countries. This could be mitigated through targeted policies and incentives that address components of the seed value chain in concert.

32. Despite advances in terms of promoting the development and commercialization of FV/LRs and underutilized species, national policies and legal frameworks supporting such initiatives are missing in many countries. Efforts to increase research and utilization of these important PGRFA should be enhanced.

#### **(4) The state of human and institutional capacities**

33. Globally, human and institutional capacities to use and conserve PGRFA have increased since the publication of the Second Report, although progress has been uneven across the key areas of PGRFA conservation and sustainable use, and across regions and countries. In general, advances seem to have been insufficient to allow full implementation of the Second GPA. Increasing human and institutional capacity remains essential to the implementation of the Second GPA and for meeting related commitments, such as relevant SDGs and relevant targets under the Kunming-Montreal Global Biodiversity Framework.

#### *National programmes for PGRFA*

34. During the reporting period, incremental progress was made in the establishment and fostering of national programmes and the development of strategies to guide their operations. The development of national biodiversity strategies and action plans (NBSAPs) was identified as a catalysing factor in this regard. However, less than half the reporting countries indicated that any progress had been made in terms of developing PGRFA-specific strategies or relevant legislation. Only 37 countries reported some progress in developing PGRFA-specific strategies or relevant legislation.

#### *Education and the strengthening of human capacities*

35. During the reporting period, education and training opportunities, particularly at secondary school level, increased slightly. However, although about 79 percent of reporting countries indicated that they had postgraduate-level educational programmes on PGRFA, 27 percent or 6 countries in sub-Saharan Africa had none, and the only reporting country from Melanesia, despite being very rich in plant diversity, reported neither undergraduate nor postgraduate education programmes on PGRFA. However, a significant increase was reported in the number of personnel with higher-level educational qualifications, typically master's degrees or doctorates, working in key institutions.

36. In addition to educational institutions, other stakeholders, including botanical gardens, genebanks, seed networks, research institutes, regional and international organizations, NGOs, foundations, associations and museums, were reported to have contributed to training and capacity development. Cooperation between universities, networks, research institutes and regional and international genebanks also increased and led to joint educational and research activities in 43 percent of reporting countries. The increased use of online tools and platforms, coupled with the

development of several innovative teaching materials, including videos and e-learning resources, increased the number of trainees that could take part in training programmes from remote locations.

#### *PGRFA networks*

37. Over 90 percent of reporting countries are members of networks for the management of PGRFA. Networks remain important hubs of activity promoting the conservation and sustainable use of PGRFA, and the benefits of international collaboration are widely recognized among stakeholders. For example, a large number of publications were produced through participation in networks.

38. While some new networks have been initiated and others have renewed their efforts, other important regional networks, such as CAPGERNET, PROCITROPICOS and REMERFI in Latin America and the Caribbean, have had to pause or cease their activities. Many networks are managed by volunteers, which, coupled with dependence on short-term project funds, often implies fragility. In addition, coordination and collaboration between stakeholders within and among networks at regional and international levels is often suboptimal.

#### *Information systems for PGRFA*

39. International information systems have expanded and proliferated and cross-platform interoperability and data-sharing initiatives have further advanced with the development of the Treaty's Global Information System (GLIS), including Genesys and WIEWS. The application of DOIs under GLIS has continued to provide opportunities to improve efficiencies in tracing germplasm through research publications. The adoption by the United Nations General Assembly in 2017 of SDG Indicator 2.5.1a on *ex situ* conservation stressed the key role of genebanks in preserving PGRFA and fostered country reporting and dissemination of standardized information through WIEWS.

40. As of 2019, 33 out of 59 reporting countries indicated that they had an operational genebank management information system for PGRFA in place. The recent development of GRIN-Global Community Edition has increased the opportunity for genebanks to adopt an open-access and easy-to-use genebank information management system. Twelve countries reported that they are considering adopting it.

41. Despite numerous advances, a significant amount of data of *ex situ* collections is still not publicly accessible, in particular characterization and evaluation data. This situation is worse with regard to data on the geographic distribution of CWRs and FV/LRs, for which systematic monitoring and inventory remains an unattained objective in all countries.

#### *Monitoring systems for genetic erosion*

42. During the reporting period, only a very few countries had a national system for monitoring and safeguarding genetic diversity and minimizing genetic erosion. Many countries reported continuing concern over the extent of genetic vulnerability and the need to deploy more diversity in cropping systems. Awareness of the importance of established mechanisms for monitoring genetic erosion, especially as part of *in situ* conservation, increased.

#### *Access and Benefit-sharing*

43. The increase in the number of accessions being made available under the Treaty's Multilateral System (MLS) from less than 600 000 in 2014 to over 2.3 million in 2021 indicates the significant progress achieved in terms of making PGRFA falling under the MLS available for research, breeding and training activities. Some national and regional genebanks also provide PGRFA not falling under the MLS available under the Treaty's standard material transfer agreement.

### *Farmers' Rights*

44. Farmers' Rights, as referred to in Article 9 of the Treaty, remained topical during the reporting period, as indicated by the development of an inventory of national measures, best practices and lessons learned from the realization of Farmers' Rights.<sup>96</sup>

### *Participation*

45. The routine participation of farmers, Indigenous Peoples and local communities and the wider public in decision-making on PGRFA and in the co-development of solutions to issues in this field increased. International institutions, countries and national stakeholders increasingly instituted mechanisms to foster pluralism of this kind. However, there remains significant scope to increase the participation of these groups of stakeholders in decision-making related to the management of PGRFA, including by strengthening capacities to facilitate participatory processes.

### *Public awareness*

46. Almost 80 percent of 89 countries reporting on this topic had a public awareness programme in place. No formal programme existed in Northern America, while in the other regions, the percentage of countries with a programme varied from 63 percent in Latin America and the Caribbean to 90 percent in sub-Saharan Africa. The increasing number of awareness-raising activities corresponds with an increase in public awareness regarding the intricacies of the management of PGRFA. It seems that decision-makers, civil society and farming communities have become more mindful of the importance of PGRFA and that challenges to PGRFA management are now more widely understood than ever before. Greater attention is being paid to the importance of conserving local crop diversity by promoting the diversity of native varieties, local seeds and traditional food products and their nutritional value. New actors with strong linkages to farmers and rural communities, such as civil society organizations, social movements and seed networks, increasingly participate in the dissemination of information. The increased use of digital and social media platforms contributes to the dissemination of information on PGRFA to a much broader audience, including among young people in particular.

### *Gaps and needs*

47. Collaborations among national stakeholders and institutions remain weak, and initiatives driven by civil society organizations are usually neither supported sufficiently nor integrated into national programmes. Despite the significant progress made during the reporting period, there is a need to strengthen academic institutions and to develop educational programmes on plant breeding, genetic improvement and biotechnology in all regions. Similarly, targeted training courses on all technical and legal aspects of PGRFA need to be provided to a greater number of professionals, farmers and civil-society stakeholders.

48. A younger generation of professionals is needed to replace retiring experts in many countries, and building sufficient capacity and transferring knowledge remains a significant challenge. Moreover, the perennial lack of research funding, including for scholarships, postdoctoral fellowships, and long-term breeding programmes, is a noteworthy bottleneck to strengthening capacities in the management of PGRFA. Weaknesses in collaboration and partnerships within and between national higher education institutions, research centres, networks and international institutions also remain unaddressed in many countries.

49. While the interoperability of existing information systems is increasingly being addressed, there remains room for improvement through shared, open standards. CWR and FV/LR data are insufficiently covered by existing information systems, which often lack the technological capacity both to manage PGRFA-related information and to access them. Overall, the key constraints to strengthening information systems are lack of expertise in plant taxonomy, information

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<sup>96</sup> [www.fao.org/plant-treaty/areas-of-work/farmers-rights/inventory-on-frs/en/](http://www.fao.org/plant-treaty/areas-of-work/farmers-rights/inventory-on-frs/en/)



management and bioinformatics, lack of the necessary digital infrastructure, and suboptimal funding and financial support.

50. In most national and regional contexts, there remains a critical need to develop the mechanisms for monitoring genetic erosion, especially for PGRFA conserved *in situ*. Surveys and baseline studies are needed as are indicators for assessing genetic vulnerability and erosion. Weak coordination among stakeholders and a lack of dedicated budgetary resources and long-term funding, remain significant hurdles to the assessment of genetic erosion and the implementation of action to address it.

51. National communication strategies and targeted public-awareness programmes on the value of PGRFA require continued renewal and dedicated resources. Although an overall public-awareness programme exists in a number of countries, interinstitutional coordination, collaboration and partnerships on communication activities, including engagement with media organizations, are still weak across all regions, resulting in shortcomings in information dissemination. Gaps also remain with regard to tailoring effective communication messages to diverse audiences and to the use of local languages. The lack of funding and dedicated budgets for communication constitutes a key constraint to raising public awareness.