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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 3.1 of the Provisional Agenda

INTERGOVERNMENTAL TECHNICAL WORKING GROUP ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Tenth Session

22–24 June 2021

DRAFT REPORT OF THE FIRST INTERNATIONAL MULTI- STAKEHOLDER SYMPOSIUM ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

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I. BACKGROUND

1. The efficient conservation and sustainable use of the broadest possible diversity of plant genetic resources for food and agricultural (PGRFA) is crucial for addressing the challenge of producing more food with fewer inputs. Currently, various drivers of genetic erosion, including changes in agricultural practices, the overreliance on a narrow set of modern crop varieties, changes to land use, destruction or fragmentation of habitats, and climate change, are increasingly threatening the continued existence, and hence availability, of these resources.
2. A significant amount of crop diversity can only be preserved effectively in natural and semi-natural environments, including protected areas, where evolution and adaptation continue to occur, and on farmers' fields. Crop wild relatives (CWR) represent a rich and largely unexplored reservoir of traits and genes that can be used to develop improved crop varieties, with novel traits such as pest and disease resistance and adaptation to abiotic stresses that may be related to climate change. Wild food plants can play an important role during times of food scarcity, as sources of vitamins, minerals and other nutrients and may complement staple crops. PGRFA found on-farm, including farmers' varieties/landraces, are often the mainstay of family's livelihoods, and are adapted to specific ecological conditions and/or farming practices. Failure to ensure the adequate management of this critically important diversity may result in its permanent loss.
3. The Commission on Genetic Resources for Food and Agriculture (Commission), at its last session, requested FAO to hold, in cooperation with the Secretariat of the International Treaty on Plant Genetic Resources for Food and Agriculture (the Treaty), two symposia on: (i) *in situ* conservation of crop wild relatives and wild food plants; and (ii) on-farm management of farmers' varieties/landraces. It requested FAO to make the outcomes available to the Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group), the Commission and the Governing Body of the Treaty.¹
4. Upon consultation of the Bureau of the Commission, it was agreed that, due to thematic synergies, the need to optimize the use of resources and time, and to sustain interest and momentum, a single symposium would be organized. The First International Multi-stakeholder Symposium on Plant Genetic Resources for Food and Agriculture (Symposium), originally scheduled to be held at FAO Headquarters in Rome on 15 and 16 June 2020, was delayed due to the COVID-19 pandemic and eventually held on 29 and 30 March 2021 as a virtual event. The Symposium was co-organized with the Treaty and the Global Crop Diversity Trust.
5. This document provides a summary of the preparations for the Symposium and the highlights of the sessions. The document *Towards a global framework for in situ conservation and on-farm management of plant genetic resources for food and agriculture*² discusses possible next steps in the light of the results of the Symposium, for consideration of the Working Group. The proceedings of the Symposium will be published in due time.

II. SYMPOSIUM PREPARATION

6. The themes that were addressed at the Symposium encompassed both *in situ* conservation and on-farm management of PGRFA (Agenda as Annex 1). The Symposium was structured around four broad themes:
 - a. The challenges and opportunities for sustainably managing crop diversity;
 - b. *In situ* conservation of crop wild relatives and wild food plants;
 - c. On-farm management of farmers' varieties/landraces; and,
 - d. The way forward: creating communities of practice.
7. A Symposium webpage was developed in all official UN languages.³ Technical presentations were pre-recorded and made available in all official UN languages on the Symposium webpages well in advance of the event. The event was advertised through partner websites, National Focal Points for

¹ CGRFA-17/19/Report, paragraph 62

² CGRFA/WG-PGR-10/21/2.1

³ <http://www.fao.org/about/meetings/multi-stakeholder-symposium-on-pgrfa/en/>

PGRFA, the FAO Members Gateway, relevant networks and through social media. The Symposium was streamed live via the FAO's media website.⁴

8. A summary of this report and possible next steps are presented for the consideration of the Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture (Working Group) in the document *Towards a Global Framework for In Situ Conservation and On-Farm Management of Plant Genetic Resources for Food and Agriculture*.⁵

III. THE SYMPOSIUM

9. The Symposium was held on 29 and 30 March 2021. More than 800 people participated in the two-day event through an online meeting platform; an additional 256 people watched via a live webcast. The webcast recordings are available on the Symposium webpage.⁶

10. **Opening and Welcome.** The opening session of the Symposium included interventions by Ms Beth Bechdol, Deputy Director-General, FAO, Ms Irene Hoffmann, Secretary of the Commission, Mr Kent Nnadozie, Secretary of the Treaty and Mr Stefan Schmitz, Executive Director of the Global Crop Diversity Trust. They stressed the importance of broadening intra- and inter-specific crop diversity as means to enhancing both the resilience of crop production systems and the nutritional status of people. The adaptation of agricultural and food systems to climate change and the imperative of achieving the Sustainable Development Goals (SDGs) were identified as compelling reasons for both enhanced crop diversity on-farm and the conservation of PGRFA *in situ*. Speakers also invited the participants and stakeholders to consider modalities of information exchange and to articulate how FAO can use its facilitating and convening power to strengthen *in situ* conservation and on-farm management of PGRFA.

11. **Session 1: Challenges and opportunities for sustainably managing crop diversity.** Three keynote addresses set the scene, highlighting the current approaches in *in situ* conservation and on-farm management of PGRFA. The issues presented ranged from bridging the gap between *in situ* and *ex situ* conservation, diversity assessments, prioritization, map-based collecting to increase PGRFA diversity in genebanks, and value addition of farmers' varieties. Speakers stressed the importance of genetic diversity for developing improved crop varieties, smallholder farmers' involvement in participatory varietal selection, assessing the potential of farmers' varieties/landraces for market development, seed production, distribution networks and research priorities. They also underscored the importance of integrating work across the agriculture, forestry, health and resource management sectors for the effective conservation and sustainable use of crop diversity. Balancing the needs of different stakeholders was highlighted as a key consideration for the success and long-term sustainability of initiatives. Discussions focused on the need for good governance, sustainable financing and multi-stakeholder cooperation.

12. **Session 2: *In situ* conservation of crop wild relatives and wild food plants.** Case studies highlighted context-specific best practices for conservation management in nature and in complementary *ex situ* programmes and the use of CWR in pre-breeding. The importance of wild food plants for the nutrition and food security of local communities during times of food scarcity was also stressed. Advances in science and technology were discussed in the context of mining novel alleles from CWR for use in crop improvement, as well as for identifying populations threatened by genetic erosion. Participants stressed the importance of mapping the locations of wild and cultivated PGRFA, using comparative threat assessments to prioritize conservation activities, and the need for developing capacities in the disciplines of taxonomy and plant breeding.

13. **Session 3: On-farm management of farmers' varieties/landraces.** Case studies discussed strategies and methods for mainstreaming the conservation and sustainable use of farmers' varieties/landraces. Speakers addressed approaches for measuring on-farm diversity, explored complementary *ex situ* conservation strategies, discussed the use of on-farm diversity in crop improvement and presented local and regional community-based initiatives that strengthen the on-

⁴ <http://www.fao.org/webcast/home/en/>

⁵ CGRFA/WG-PGR-10/21/2.1

⁶ <http://www.fao.org/about/meetings/multi-stakeholder-symposium-on-pgrfa/en/>

farm management of PGRFA diversity. Discussions underlined the need for dialogue between genebanks managers and farmers on the establishment of community seedbanks, the formal registration of farmers' varieties/landraces and the development of value chains.

14. **Session 4: The way forward: creating communities of practice.** Participants presented the role of existing networks and communities of practice for conserving PGRFA outside of genebanks and for facilitating the sustainable use of crop diversity. It was highlighted that communities of practice provide effective linkages among different stakeholders for promoting partnerships, sharing knowledge and disseminating best practices. Harmonized national and/or regional policies, including national plans, frameworks and regulatory systems were deemed important tools for enhancing the relevance of PGRFA to the efforts to achieve food security and nutrition. Overall, the interventions indicated that communities of practice are essential for sharing knowledge, including on the challenges identified and the success stories presented.

15. **Panel Discussion: Opportunities, Necessary Actions and Recommendations** For the final session of the symposium, nine panellists with expertise in different aspects of *in situ* conservation and on-farm management of PGRFA provided short remarks on their perspectives on: the main technical and scientific challenges in promoting *in situ* conservation and use of crop wild relatives and wild food plants and on-farm conservation and use; how these can be addressed; and how global communities of practice could address these challenges over the coming decades. Overall, the desirability of multi stakeholder collaboration with iterative planning and building on existing initiatives was emphasized several times. Specifically, the discussions highlighted:

- i. Technical and scientific challenges: The key gaps highlighted for CWR included limited knowledge on taxonomy and reproductive biology necessary for their effective management *in situ* and *ex situ* conservation facilities; the need for increased screening of CWR for economically important traits; and greater use of CWR in pre-breeding globally. The insufficient data on the characterization and evaluation of farmers' varieties/landraces was identified as a major constraint to their use to enhance the resilience of cropping systems and dietary diversity.
- ii. Local solutions to address global issues: The importance of setting priorities for conservation, identifying the conservation approaches (*in situ*, *ex situ* and/or on-farm) and the target beneficiaries, as applicable, was stressed. Value chains, associated with access to quality seeds and planting materials, were also highlighted as necessary for linking conservation to sustainable use of crop diversity. Finally, the importance of taking into account the prevailing local socio-cultural conditions when designing and implementing activities for conservation and use of PGRFA was underscored. The importance of developing harmonized national and/or regional policies, including national plans, frameworks and regulatory systems was also stressed.
- iii. Knowledge management and information exchange. The sharing of information through publicly accessible platforms was identified as a pressing need for promoting the use of crop diversity. The need to share best practices, tools and approaches, including for the agronomic management of crops and varieties was also emphasized. The panellists offered perspectives on the setting of common research priorities and goals, especially through participatory and collaborative manners.

Building communities of practice: The importance of greater dialogue among the agriculture, environment, forestry and health sectors was highlighted as a means to promote *in situ* conservation and on-farm management of PGRFA. Effective, successful communities of practice will need to be as inclusive as possible, with a high degree of transparency in a neutral forum. The panellists also agreed that addressing common problems could be a starting point for building a community of practice. Such a community could initially undertake joint actions for mutual benefit, e.g. fundraising, sharing lessons learnt and developing guidelines for best practices.

VI. CONCLUSION

16. The Symposium brought together a range of diverse, relevant stakeholders. The number and participation of stakeholders demonstrated a need for the exchange of information currently unmet through other channels.

17. The Symposium highlighted that FAO, as a neutral forum, would be well placed to convene stakeholder meetings, coordinate information exchange and capacity development, for example through webinars, and facilitate the reflection of stakeholder experiences and best practise in global policies, work programmes and funding priorities. A symposium format may therefore serve as a means for fostering a community of practice underpinned by a shared interest in the best practices for *in situ* conservation and on-farm management of PGRFA, especially farmers' varieties/landraces.

Agenda

First International Multi-Stakeholder Symposium on Plant Genetic Resources for Food and Agriculture

Technical Consultation on *in situ* conservation and on-farm management of PGRFA 29 - 30 March 2021

Virtual Zoom Event

Technical Presentations for Sessions 2, 3 and 4 have been pre-recorded and made available online in official FAO languages on the Symposium webpage. Discussions will be live streamed during the event. Interpretation will be available in all six official FAO languages.

Opening and Welcome: Live Session

Chair: **Mr Jingyuan Xia**, Director, Plant Production and Protection, FAO

10:00 – 11:00 **Ms Beth Bechdol**, Deputy Director-General, FAO

Ms Irene Hoffmann, Secretary, Commission on Genetic Resources for Food and Agriculture, FAO

Mr Kent Nnadozie, Secretary, International Treaty on Plant Genetic Resources for Food and Agriculture, FAO

Mr Stefan Schmitz, Executive Director, Global Crop Diversity Trust

Session 1: Setting the Scene: the challenges and opportunities for sustainably managing crop diversity

Session Chairs: **Mr Luigi Guarino**, Global Crop Diversity Trust

Mr Mario Marino, ITPGRFA

Presentations and discussions: held live during event

11:00 – 12:30 **Crop diversity for sustainable development: bridging the gaps between
in situ and ex situ conservation**

Keynote
speeches

Mr Kuldeep Singh, National Bureau of Plant Genetic Resources, India

Successful approaches and practices for the sustainable use of crop diversity

Ms Maria Andrade, International Potato Center

Conserving crop diversity *in situ* and on-farm: balancing the needs of diverse stakeholders

Mr Johan Robinson, United Nations Environment Programme title?

12:30 – 14:30 *Break*

Session 2: *In situ* conservation of crop wild relatives and wild food plants

Session chairs: *Mr Chikelu Mba*, FAO

Ms Mariana Yazbek, ICARDA

Presentations: Pre-recorded and available online prior to event

Discussions: Held live during event

- 14.30 – 15:30
Moderated discussion
- Theme 1: *Securing wild PGRFA diversity in situ and in complementary ex situ programmes***
- Bridging *in situ* and *ex situ* conservation in the field
Mr Ehsan Dulloo, Alliance of Bioversity International & CIAT
 - Complementary conservation strategies: experiences from the Crop Trust
Mr Hannes Dempewolf, Global Crop Diversity Trust
 - Identification of promising species, collecting plant germplasm and *in situ* conservation in Brazil
Mr Jose Francisco Montenegro Valls, EMBRAPA Genetic Resources and Biotechnology/CENARGEN, Brazil
- 15:30 – 16:30
Moderated discussion
- Theme 2: *In situ* conservation and integration with plant breeding**
- Pre-breeding using Crop Wild Relatives
Ms Shivali Sharma, ICRISAT
 - Experiences in Crop Wild Relative conservation and use
Ms Maria Francisca José Acevedo, CONABIO, Mexico
 - *In situ* conservation of crop wild relatives in China
Mr Qingwen Yang, CAAS, China
- 16:30 – 17:30
Moderated discussion
- Theme 3: *Wild food plants: their conservation and use***
- Wild food plants for a sustainable future
Ms Tiziana Ulian, Royal Botanic Gardens Kew, UK
 - Wild food plants: increasing dietary diversity
Ms Jessica Fanzo, John Hopkins University, USA
 - Indigenous peoples and local communities and the importance of wild food plants in Botswana
Ms Khola Mogotsi, National Agricultural Research and Development Institute, Botswana

Session 3: On-farm management of farmers' varieties/ landraces

Session chairs: *Ms Devra Jarvis*, Platform for Agrobiodiversity Research

Mr Mario Pagnotta, University of Tuscia, Italy

Presentations: Pre-recorded and available online prior to event

Discussions: Held live during event

- | | |
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| 09:30 – 10:30
Moderated
discussion | <p>Theme 1: Measuring and securing on-farm diversity</p> <ul style="list-style-type: none"> • Richness and evenness of farmers' variety/landrace diversity maintained by farming communities
<i>Ms. Maedeh Salimi, CENESTA, Iran</i> • Complementarity of on-farm management and <i>ex situ</i> conservation
<i>Ms Ximena Cadima, Fundación PROINPA, Bolivia</i> • From the genebank back to the farm
<i>Mr Lee Hickey, University of Queensland, Australia</i> |
| 10:30– 11:30
Moderated
discussion | <p>Theme 2: Harnessing on-farm diversity for resilience</p> <ul style="list-style-type: none"> • Harnessing landrace diversity for resilience
<i>Mr Ousmanne Boukar, IITA</i> • Development of farmers' varieties/landraces
<i>Ms Martha Willcox, University of Wisconsin-Madison, USA</i> • Alternative breeding approaches: participatory plant breeding
<i>Mr. Salvatore Ceccarelli, ICARDA (retired), Italy</i> |
| 11:30 – 12:30
Moderated
discussion | <p>Theme 3: Addressing local needs through on-farm management</p> <ul style="list-style-type: none"> • The thriving diversity of Peru's potato park
<i>Mr Alejandro Argumedo, Asociación Andes, Peru</i> • Role of community seed banks in the management of PGRFA on-farm
<i>Mr Pitambar Shrestha, LIBIRD, Nepal</i> • Vietnam Seed Clubs: An integrated approach to on-farm seed management
<i>Ms Normita Ignacio, SEARICE, Philippines</i> |
| 12:30 – 14:30 | <i>Break</i> |

Session 4: The way forward: creating communities of practice

Session chairs: *Ms Jennifer McConnell*, Irish Seed Savers, Ireland

Mr Elcio Guimares, Embrapa, Brazil

Presentations: Pre-recorded and available online prior to event.

Discussions: Held live during event

- 14:30 – 15:30
- Creating communities of practice for *in situ* conservation and management of PGRFA in Europe: lessons learnt
Mr Nigel Maxted, University of Birmingham, U.K.
 - Experiences in Zambia through the Darwin Initiative
Mr Dickson Ng'uni, Zambia Agriculture Research Institute, Zambia
 - Communities of practice in cacao networks: Cocoa of Excellence and the importance of genetic diversity
Ms Brigitte Laliberté, Alliance of Bioversity International and CIAT
 - Synergies among public and private sectors
Mr Niels P. Louwaars, Plantum NL, Netherlands
- Moderated discussion

15:30 – 17:30 Panel discussion: Opportunities, necessary actions and recommendations

Moderators: *Ms Bonnie Furman*, FAO, and *Ms Arshiya Noorani*, FAO

Mr Alvaro Toledo, ITPGRFA

Panellists: *Ms Maria Francisca José Acevedo*, CONABIO, Mexico

Ms. Maria Andrade, International Potato Center

Mr Niels Louwaars, Plantum NL, Netherlands

Mr Nigel Maxted, University of Birmingham, U.K.

Ms Khola Mogotsi, National Agricultural Research and Development Institute, Botswana

Mr Chris Ojiewo, International Center for Research in the Semi-Arid Tropics

Mr Johan Robinson, United Nations Environment Programme

Mr Kuldeep Singh, National Bureau of Plant Genetic Resources, India

Ms Martha Willcox, University of Wisconsin-Madison, USA

Closure of the Symposium