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COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 9.3 of the Provisional Agenda

Twentieth Regular Session

Rome, 24–28 March 2025

**REGIONAL CONSULTATION FOR ASIA AND THE PACIFIC:
REVIEW OF THE SECOND GLOBAL PLAN OF ACTION FOR
PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE**



Food and Agriculture
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COMMISSION ON
GENETIC RESOURCES
FOR FOOD AND
AGRICULTURE



International Treaty
on Plant Genetic Resources
for Food and Agriculture



**REGIONAL CONSULTATION FOR ASIA AND THE PACIFIC:
REVIEW OF THE SECOND GLOBAL PLAN OF ACTION
FOR PLANT GENETIC RESOURCES
FOR FOOD AND AGRICULTURE**

MEETING REPORT

BANGKOK, THAILAND,

7–9 MAY 2024,

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I. ORGANIZATION OF THE CONSULTATION

1. The Regional Consultation for Asia and the Pacific: Review of the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture (Second GPA) was held at the premises of the Swissôtel Bangkok Ratchada in Bangkok, Thailand from 7 to 9 May 2024. The workshop was co-organized by the Plant Production and Protection Division (NSP) of the Food and Agriculture Organization of the United Nations (FAO), the Secretariat of the Commission on Genetic Resources for Food and Agriculture (Commission) and the International Treaty for Plant Genetic Resources for Food and Agriculture (Treaty) and was hosted by the Asia-Pacific Association of Agricultural Research Institutions (APAARI). The list of participants is given in *Appendix IV* to this report.
2. The consultation was divided into six sessions. Session 1 included welcoming remarks to open the regional consultation, as well as presentations to set the scene for the consultation. Session 2 addressed the state of *in situ* conservation and management of plant genetic resources for food and agriculture (PGRFA), including key regional findings from the SOW3. Session 3 addressed the state of *ex situ* conservation of PGRFA. Session 4 addressed the state of sustainable use of PGRFA. Session 5 addressed the state of human and institutional capacities. Session 6 addressed the structure of the revised Second GPA. The full agenda of the regional consultation is provided in *Appendix I* to this report.

II. WELCOMING REMARKS AND OPENING OF THE WORKSHOP

3. Welcoming remarks were provided by representatives from the FAO Regional Office for Asia and the Pacific, APAARI, and the Secretariats of the Commission and Treaty.
4. Ms. Hang Thi Thanh Pham, Senior Resilience Officer, FAO Regional Office for Asia and the Pacific, welcomed participants, highlighting the timeliness of the regional consultation to review the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture. She emphasized the critical challenges posed by hunger, malnutrition, climate change and other global issues, stressing the need for collaborative efforts to transform agri-food systems. She thanked APAARI for their hospitality and excellent organization of the workshop and encouraged all participants to contribute meaningfully to the review and discussion of regional priorities for the next decade.
5. Mr Ravi Khetarpal, Executive Director, Asia-Pacific Association of Agricultural Research Institutions, welcomed all guests and participants, expressing APAARI's delight in hosting the Regional Consultation for the second global plan of action for plant genetic resources. He highlighted APAARI's unique and vibrant multistakeholder partnership, its commitment to natural resource management, risk mitigation, policy advocacy and inclusive development. He emphasized the importance of genetic resources in the context of climate change and the critical role of collaboration with international organizations. Mr Khetarpal also addressed funding challenges and the significance of the Treaty benefit-sharing fund.
6. Mr Stefano Diulgheroff, Information Management Officer, Plant Production and Protection Division, FAO and Secretary of the Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture welcomed participants and thanked the FAO Regional Office for Asia and the Pacific for supporting the organization of the workshop and the Treaty for its collaboration in its organization, and recognized the excellent work of APAARI in hosting the workshop. He highlighted the Commission's ongoing commitment to the conservation and sustainable use of plant genetic resources and noted the importance of integrating recent policy developments, such as the Kunming-Montreal Global Biodiversity Framework, into the revised Second GPA. He concluded by thanking APAARI colleagues for their efforts and encouraging active participation for a successful and productive workshop.
7. Mr Mario Marino, Technical Officer, Secretariat of the Treaty, acknowledged the contributions of the FAO and its regional office, emphasizing the importance of cooperation between the Treaty and the Commission and thanked APAARI for hosting the workshop. He also noted key achievements and progress in implementing the Treaty, including advancements in access and benefit-sharing, farmers' rights, and the conservation and sustainable use of plant genetic resources. He expressed his hope that the support provided will enable Contracting Parties to actively participate in

the process of updating the Second GPA noting that it is particularly relevant for the Treaty's work on conservation and sustainable use under Articles 5 and 6 of the Treaty. Mr Marino concluded by encouraging active participation and valuable input from the attendees to guide the revision of the Second GPA, wishing everyone a successful and productive consultation.

III. SETTING THE SCENE: INTRODUCTION TO THE REGIONAL CONSULTATION

8. Mr Chikelu Mba, Deputy Director, Plant Production and Protection Division, FAO, provided an introduction to the objectives of the consultation. Mr Diulgheroff gave a presentation on the *Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture* (Second GPA),¹ and provided the context of the rolling GPA and the periodic assessments of its implementation. Mr Diulgheroff also introduced the draft *Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture* (SOW3).² Ms Bonnie Furman, Agricultural Officer, Plant Production and Protection Division, FAO, presented possible options for revising the Second GPA.

IV. IN SITU CONSERVATION AND MANAGEMENT OF PGRFA

9. Ms Arshiya Noorani, Agricultural Officer, Plant Production and Protection Division, FAO, presented the key findings of the SOW3 for *in situ* conservation and management of PGRFA at both the global and regional levels, including gaps and needs. The gaps and needs identified are presented in *Appendix II* to this report.

10. Participants broke into subregional working groups to discuss the relevance and fitness for purpose of Priority Activities (PAs) 1–4 of the Second GPA in light of the gaps and needs and to provide suggestions for any revisions. The working groups reported back to the plenary. Summary recommendations are provided in Section 1 of *Appendix III* to this report.

V. EX SITU CONSERVATION OF PGRFA

11. Ms Furman presented the key findings of the SOW3 for *ex situ* conservation of PGRFA at both the global and regional level, including gaps and needs. The gaps and needs identified are presented in Section 2 of *Appendix II* to this report.

12. Participants then broke into subregional working groups to discuss the relevance and fitness for purpose of PAs 3–7 of the Second GPA in light of the gaps and needs and to provide suggestions for any revisions. The working groups reported back to the plenary. Summary recommendations are provided in Section 2 of *Appendix III* to this report.

VI. SUSTAINABLE USE OF PGRFA

13. Mr Mba presented the key findings of the SOW3 for sustainable use of PGRFA at both the global and regional levels, including gaps and needs. The gaps and needs identified are presented in Section 3 *Appendix II* to this report.

14. Participants then broke into subregional working groups to discuss the relevance and fitness for purpose of PAs 8–12 of the Second GPA in light of the gaps and needs and to provide suggestions for any revisions. The working groups reported back to the plenary. Summary recommendations are provided in Section 3 of *Appendix III* to this report.

VII. BUILDING INSTITUTIONAL AND HUMAN CAPACITIES

15. Mr Diulgheroff presented the key findings of the SOW3 for building institutional and human capacities at both the global and regional levels, including gaps and needs. The gaps and needs identified are presented in Section 4 of *Appendix II* to this report.

¹ FAO. 2012. *Second Global Plan of Action for Plant Genetic resources for Food and Agriculture*. Rome. <https://openknowledge.fao.org/handle/20.500.14283/i2624e>

² CGRFA/WG-PGR-12/24/3/Inf.1.

16. Participants then broke into subregional working groups to discuss the relevance and fit for purpose of PAs 13–18 of the Second GPA in light of the gaps and needs and to provide suggestions for any revisions. The working groups reported back to the plenary. Summary recommendations are provided in Section 4 of *Appendix III* to this report.

VIII. STRUCTURE OF THE REVISED SECOND GPA

17. Mr Mba led a discussion on the format and structure of a revised Second GPA, providing three potential options. These included: (1) a lightly revised version to reflect new policy developments/guidelines and technical developments since the publication of the Second GPA; (2) a condensed version in which PAs would be shortened to approximately one to two pages per PAs and would include technical and policy updates and minor rearrangements of PAs; and (3) a focused action plan for action by governments. Options 2 and 3 would be complemented by standalone guidelines for their implementation. Discussions were held in plenary. All the PAs were deemed relevant. The discussions reflected the need for a balance between the complexity of the text (due to the negotiated nature of the document) and the possibility of simplifying the content.

IX. CLOSING

18. Mr Mba underscored the importance of convening such a workshop. He highlighted that the discussions reinforced the critical role of plant genetic resources for food security, climate change mitigation and economic development. He congratulated APAARI for having provided excellent support for the organization and operation of the consultation. He thanked all the speakers and participants for their enthusiasm and active engagement and expressed his gratitude to the Commission and Treaty Secretariats for having co-organized the event. He also thanked the staff of the Swissôtel Bangkok Ratchada and the technicians team for their excellent work.

APPENDIX I
AGENDA OF THE REGIONAL CONSULTATION FOR THE NEAR EAST AND NORTH AFRICA: REVIEW OF THE SECOND GLOBAL PLAN OF ACTION FOR PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

| 23 July – Day 1 | |
|------------------------|---|
| 09:00 – 09:30 | Registration |
| SESSION 1 | WELCOME AND INTRODUCTION |
| 09:30 – 10:00 | <p>Welcome and opening remarks</p> <ul style="list-style-type: none"> • Ms. Hang Thi Thanh Pham, Senior Resilience Officer, FAO Regional Office for Asia and the Pacific • Mr. Ravi Khetarpal, Executive Director, Asia-Pacific Association of Agricultural Research Institutions • Mr Stefano Diulgheroff, Information Management Officer, Plant Production and Protection Division, FAO and Secretary Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture, Commission on Genetic Resources for Food and Agriculture • Mr Mario Marino, Technical Officer, International Treaty on Plant Genetic Resources for Food and Agriculture |
| 10:00 – 10:15 | <p>Introduction to objectives of the consultation</p> <p>Mr Chike Mba, Deputy Director, Plant Production and Protection Division, FAO</p> |
| 10:15 – 10:30 | <p>The Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture and the preparation of the draft <i>Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture</i></p> <p>Mr Stefano Diulgheroff, Information Management Officer, Plant Production and Protection Division, FAO</p> |
| 10:30 – 10:45 | <p>Revising the Second Global Plan of Action for Plant Genetic Resources for Food and Agriculture: Possible options</p> <p>Ms Bonnie Furman, Agricultural Officer, Plant Production and Protection Division, FAO</p> |
| 10:45 – 11:00 | <i>Coffee Break</i> |
| SESSION 2 | IN SITU CONSERVATION AND MANAGEMENT OF PGRFA |
| 11:00 – 11:15 | <p>Priority Activities of the Second GPA (1–4) and key findings of the Third Report:</p> <p>Ms Arshiya Noorani, Agricultural Officer, Plant Production and Protection Division, FAO</p> |
| 11:15 – 13:00 | WORKING GROUPS |
| 13:00 – 14:15 | <i>Lunch</i> |

| | |
|------------------|--|
| 14:15 – 15:00 | PLENARY: WORKING GROUP REPORTS AND DISCUSSION |
| SESSION 3 | EX SITU CONSERVATION OF PGRFA |
| 15:00 – 15:15 | Priority Activities of the Second GPA (5–7) and key findings of the Third Report Ms Bonnie Furman, Agricultural Officer, Plant Production and Protection Division, FAO |
| 15:15- 15:45 | WORKING GROUPS |
| 15:45 – 16:15 | <i>Coffee Break</i> |
| 16:15 – 17:15 | WORKING GROUPS (ctd) |
| 17:15 – 18:00 | PLENARY: WORKING GROUP REPORTS AND DISCUSSION |
| 18:00 – 20:00 | Reception |

| | |
|------------------------|--|
| 24 July – Day 2 | |
| 9:00 – 10:30 | PLENARY: DRAFT RECOMMENDATIONS <ul style="list-style-type: none"> • <i>In Situ</i> Conservation and Management of PGRFA • <i>Ex Situ</i> Conservation |
| 10:30 – 11:00 | <i>Coffee Break</i> |
| SESSION 4 | SUSTAINABLE USE OF PGRFA |
| 11:00 – 11:15 | Priority Activities of the Second GPA (8–12) and key findings of the Third Report Mr Chikelu Mba, Deputy Director, Plant Production and Protection Division, FAO |
| 11:15- 12:45 | WORKING GROUPS |
| 12:45 - 14:15 | Lunch |
| 14:15 – 15:00 | PLENARY: WORKING GROUP REPORTS AND DISCUSSION |
| SESSION 5 | BUILDING INSTITUTIONAL AND HUMAN CAPACITIES |
| 15:00 – 15:15 | Priority Activities of the Second GPA (13–18) and key findings of the Third Report Mr Stefano Diulgheroff, Information Management Officer, Plant Production and Protection Division, FAO |
| 15:1 – 16:00 | WORKING GROUPS |

| | |
|---------------|--|
| 16:00 – 16:30 | Coffee Break |
| 16:30 – 17:15 | WORKING GROUPS (ctd) |
| 17:15 – 18:00 | PLENARY: WORKING GROUP REPORTS AND DISCUSSION |

| 25 July – Day 3 | |
|------------------------|--|
| 9:00 – 10:30 | PLENARY: DRAFT RECOMMENDATIONS <ul style="list-style-type: none"> • Sustainable use of PGRFA • Institutional and Human Capacities |
| 10:30 – 11:00 | <i>Coffee Break</i> |
| SESSION 6 | THE REVISED SECOND GPA |
| 11:00 – 12:30 | Format, structure, purpose, target group(s) of the revised Second GPA – Final discussion |
| 12:30 – 12:40 | Closing remarks Mr Chikelu Mba, Deputy Director, Plant Production and Protection Division, FAO |
| 12:40 – 14:00 | <i>Lunch</i> |

APPENDIX II

MAIN REGIONAL GAPS AND NEEDS IDENTIFIED

The following sections summarize the regional gaps and needs identified from the draft *Third Report on the State of the World's Plant Genetic Resources for Food and Agriculture*.

SECTION 1: *IN SITU* CONSERVATION AND MANAGEMENT OF PGRFA
Main gaps in the region

- Lack of knowledge in identifying geographical distribution of PGRFA.
- Shortage of trained personnel.
- Insufficient management of *in situ* conservation sites for crop wild relatives (CWR) and wild food plants (WFP).
- Lack of priority for survey and inventory activities in *in situ* conservation areas.
- Lack of knowledge dissemination about CWR, WFP and farmers' varieties/landraces (FV/LR) in genetic resources management.
- Lack of coordination between genebanks and *in-situ/on-farm* conservation programmes.
- Insufficient financial and human resources.
- Insufficient expedition surveys, sampling and coverage of crop species and territories.
- Weak institutional arrangements with other government services and organizations for a coordinated approach in surveying and inventorying important PGRFA.
- Lack of or insufficient national research funding for *on-farm* management of PGRFA.
- Insufficient identification of appropriate germplasm for reintroduction following a disaster.
- Lack of coherent and consistent legislation and weak involvement of state and local authorities in disaster risk-reduction measures.
- Lack of priority/inclusion of FV/LR in the restoration of crop systems.
- Unclear definition of responsibilities for the management of CWR among government agencies.

Main needs in the region

- Sufficient knowledge of existing crop diversity, its distribution and evolution over time.
- Strengthened awareness campaigns on the conservation of PGRFA.
- Capacity building in analysing inventories for identifying trends.
- Trained field taxonomists, population biologists and other experts.
- Coordination and concerted efforts among local authorities to undertake surveys and conservation activities.
- Indicators and methods to monitor diversity and minimize genetic erosion and its drivers.
- Establishment of national, regional and global baselines.
- Updated inventories of CWR, WFP and FV/LR.
- Urgent implementation of targeted survey/inventory of PGRFA.
- Documentation of threatened species and related traditional knowledge for developing recommendations for further improvement of PGRFA.
- Strong support from the government for the improvement of national legal status, strategy, infrastructure and human-resources capacity in the conservation and sustainable use of PGRFA.
- Continuous support from the international agencies in the form of financial support, training of national staff, providing methodologies, training materials and organizing joint study on surveying and inventorying PGRFA.
- Awareness building on indigenous PGRFA, their extent and significance, their erosion, and their potential for improvement, through seminars, publication of booklets and agrobiodiversity fairs.
- Promotion of the uses of traditional varieties in identified pocket areas (rainfed areas and marginal lands) where farmers still depend on them.
- Developing markets for products originating from traditional and underutilized crop varieties.
- Providing incentives, including awards, to farmers for *on-farm* conservations, management and improvement of PGRFA.

- Programmes to ensure participation and encouraging the younger generation to take part in on-farm PGRFA management.
- Development of national and international projects for joint research activities to support on-farm management and improvement of PGRFA.
- Training of national staff and farmers about on-farm management and improvement of PGRFA and community seedbank development.
- Support for the use of red lists for at risk FV/LR.
- Policies to support implementing strategies for educating the general population, especially the rural communities, on conserving and managing their crop diversity on-farm.
- Research to improve farmer varieties that have important traits in e.g. nutritive value or traits conferring tolerance to abiotic stresses and resistance to pest and diseases.
- Promotion of programmes using FV/LR for farmer assistance after disaster in local and national governments.
- Clear commitments on, and coordinated response to, the restoration of adequate quantities of quality seed and planting materials of adapted crop varieties following disaster situations.
- Capacity-building programmes on CWR conserved *in situ*.
- Enhanced public awareness on the importance and conservation of CWR,
- Regional and international collaboration and support for promoting *in situ* conservation of CWR/WPF.

SECTION 2: *EX SITU* CONSERVATION OF PGRFA

Main gaps in the region

- Poor cooperation between national genebanks, government agencies, and *in situ* conservation authorities.
- Shortage of trained technical personnel (taxonomists).
- Gaps in *ex situ* collections exists but insufficiently documented, especially in terms of distribution and diversity of crop species and genera, species and genetic richness.
- Insufficient funding for research expeditions, especially to fill geographical and species gaps, particularly focusing on underrepresented areas and species, such as ancient local varieties, non-orthodox species, neglected and underutilized species (NUS), CWR, WFP and aquatic genetic resources.
- Lack of regional and international collaboration in terms of capacity for *ex situ* conservation and improved germplasm management and safety duplication.
- Insufficient government support for genebanks' adequate maintenance and development.
- Gap between *ex situ* collections of PGRFA in national genebank and needs of domestic plant breeders.
- Lack of facilities and expertise for cryopreservation, *in vitro* conservation, and DNA sample storage.
- Insufficient laboratory and/or field technical support to assist in regeneration activities, especially for non-orthodox and cross-pollinated species and CWR.
- Inadequate database management system to flag accessions requiring regeneration.

Main needs in the region

- Programmes for enhanced capacities in gap analysis, ecogeographical referencing, collecting and handling CWR and other collected materials, etc.
- Facilities and capacities for maintaining non-orthodox species (field genebanks) and CWR/WFP.
- Better coordination among institutions and field stations to carry out regeneration.

SECTION 3: SUSTAINABLE USE OF PGRFA

Main gaps in the region

- Insufficient characterization of local varieties, especially underutilized species.
- Inadequate coordination between research programmes and germplasm banks for determination and identification of subsets related to specific characteristics.
- Limited use of local PGRFA, including FV/LR and CWR, in pre-breeding and breeding programmes.
- Underrepresentation of genetic variation in breeding materials stored in genebanks.
- Insufficient funding, capacities and infrastructure for the use of advanced technologies for pre-breeding and breeding.
- Lack of public–private partnerships in breeding activities.
- Lack of extension services to bridge the gap between research and farming practices.
- Insufficient incentives for research, production and processing of diverse crops.
- Lack of capacity of farmers, technical staff and agricultural extension workers on the benefits and methods of crop diversification.
- Insufficient policies for enhancing genetic diversity in production systems.
- Lack of policies/legal frameworks for the development and commercialization of FV/LR and NUS.
- Insufficient coordination between public and private sectors for developing long-term breeding programs of local varieties.
- Absence of strategies and regulations to ensure the production and distribution of quality seeds and planting materials.
- Non-competitiveness of FV/LR and NUS in domestic and foreign markets: financial incentives/subsidies needed.
- Lack of investment/incentives for the release and adoption of new varieties.
- Insufficient research, coordination and mechanisms for quality seed production and distribution.
- Insufficient linkages among the public sector, private sector and farmers.

Main needs in the region

- Enhanced capacities and infrastructure for molecular characterization.
- Updated seed laws and policies.
- Comprehensive data management systems to ensure systematic documentation and easy access to characterization and evaluation data sharing.
- Greater use of species and varietal diversity to reduce vulnerability to biotic and abiotic stresses.
- Promote coordination mechanisms with diverse stakeholders and/or local institutions.
- Improved capacities, documentation, characterization and evaluation of farmers' varieties and underutilized species.
- Developing seed systems with clear linkages to processing and storage, especially for NUS.
- Investment to support the creation of efficient seed systems.

SECTION 4: HUMAN AND INSTITUTIONAL CAPACITIES

Main gaps in the region

- Fragmentation of rules and policies.
- Insufficient skilled staff.
- Poor documentation of neglected and at risk CWR, WFP and FV/LR.
- Shortage of qualified professionals (staff turnover and few young people to replace retiring staff).
- Lack of strategy and policy to develop human capacity.
- Insufficient formal training programmes.
- Communicative messages not sufficiently tailored to audiences.

Main needs in the region

- Strategy for PGRFA – “mega project”.
- Institutional rather than national programmes.
- Enhanced stakeholders’ involvement.
- National coordination bodies.
- Resources and competencies.
- Financial sustainability.
- PGRFA incorporated into national programmes.
- Improve technical capacity.
- Need for good infrastructure.
- Inter-institutional collaboration.
- Online access of *ex situ* data (passport, characterization/evaluation).
- Comprehensive inventories of CWR and FV/LR.
- Leverage existing platforms.
- Indicators and methods to monitor diversity and minimize genetic erosion and its drivers.
- Establish national, regional and global baselines.
- Foster collaboration including with regional and international centres.
- Update inventories of CWR, WFP and FV/LR.
- Fostered collaboration including with regional and international centers.
- Attractive career paths and recognition to retain PGRFA professionals.
- Interdisciplinary and international collaboration.
- Improved awareness of the importance of PGRFA.

APPENDIX III

RECOMMENDATIONS FOR THE REVISION OF THE SECOND GPA

The following sections summarize and consolidate inputs and comments received from the subregional working groups.

SECTION 1: *IN SITU* CONSERVATION AND MANAGEMENT OF PGRFA**PA 1. Surveying and inventorying plant genetic resources for food and agriculture**

- Highlight importance of technical capacities in taxonomy.
- Promote inventories of taxa of PGRFA (crop wild relatives [CWR], wild food plants [WFP]) growing in un-cultivated land, forests, or on-farm.
- Increase awareness for policy makers of the importance of inventorying PGRFA diversity.
- Highlight importance of repeated inventories to assess changes over time.
- Support documentation of associated traditional knowledge when inventorying wild and cultivated PGRFA.
- Support improved coordination among the different ministries/departments/organizations.

PA 2. Supporting on-farm management and improvement of PGRFA

- Foster the development of incentives for (custodian) farmers to conserve and use local PGRFA.
- Promote awareness raising of farmers' varieties/landraces (FV/LR) among all stakeholders, especially farmers, policymakers and youth.
- Address cooperation between public and private sectors in mainstreaming farmer's varieties.
- Support farmers' involvement in participatory plant breeding/ participatory varietal selection (PPB/PVS).
- Foster linkages with community seed banks (CSBs) for the distribution of FV/LR.

PA 3. Assisting farmers in disaster situations to restore crop systems

- Promote the use of information technology and databases to assess the extent and impact of disasters on crop diversity, including through mobile phone applications.
- Promote the restoration of markets as well as production systems.
- Promote regional and national seed emergency preparedness.

PA 4. Promoting *in situ* conservation and management of crop wild relatives and wild food plants

- Promote linkages with Kunming Montreal-Global Biodiversity Framework and the Convention on Biological Diversity.
- Support increased awareness of all stakeholders on need for conservation of CWR and WFP.
- Support the national coordination among ministries, institutions and related stakeholders.
- Foster regional coordination and sharing of knowledge.

SECTION 2: *EX SITU* CONSERVATION OF PGRFA**PA 5. Supporting targeted collecting of plant genetic resources for food and agriculture**

- Characterization to be moved to *ex situ* section: Suggested new wording for PA5 "Supporting targeted collection and characterization of PGRFA".
- Collecting of PGRFA should be reflected in medium-term and long-term national programs or development strategies.

- Need for improved documentation and information management systems – and sharing of data - could reduce unwanted duplications within and across countries.
- Need for expertise and capacity to use data and information to target additional collecting missions or identify gaps including using more advanced technologies and GIS applications etc.
- Collection of germplasm of wild PGRFA a bottleneck, especially when found in areas managed by other ministries/departments.
- Collecting materials and associated traditional knowledge needs to be encouraged.

PA 6. Sustaining and expanding *ex situ* conservation of germplasm

- Very expensive to maintain collections in *ex situ* collections leading to loss of accessions:
 - better policy and budget support from national government;
 - more efforts to be made to establish at least basic Standard Operating Standards for genebank management with aim to have genebanks following international/FAO standard for genebank management;
 - efficient infrastructure with low management cost and low carbon emission and human resources development is required;
 - regional coordination and approaches to consider safety duplication and long-term storage of more difficult taxa to be conserved (tree crops, other taxa propagated through non-orthodox seed, etc.): cryopreservation, *in vitro* and DNA banks; and
 - deploy diverse conservation approaches, eg conservation of genes rather than genotypes; establishment of core collections etc.
- Guidelines needed on exchanging germplasm: solution multilateral system mechanism (for Treaty Contracting Parties) for the exchange of PGRFA should be referred to more explicitly.
- Data systems need to be maintained/updated.

PA 7. Regenerating and multiplying *ex situ* accessions

- Many species, especially CWR, require well-defined protocols for regeneration.
- Cost of regeneration, especially for cross-pollinating species, is high.
- Need support to establish improved facilities for tissue-culture mass-propagation.
- Need for more investment into research into regeneration and multiplication protocols for lesser utilized taxa (banana, yam, etc.).
- Seed health assessment of the regenerated/multiplied seeds is required prior to conservation to ensure healthy seed distribution.
- Need to develop and link better with CSBs.

SECTION 3: SUSTAINABLE USE OF PGRFA

PA 8. Expanding the characterization, evaluation and further development of specific subsets of collections to facilitate use

- Characterization to be moved to section on Ex situ Conservation as a standalone PA
 - Promote the development of molecular markers for lesser researched crops and NUS.
 - Support the review and revision of morphological descriptors.
 - Encourage use of modern technologies, including DNA banking for inventorying genes/traits of importance/interest and reducing cost of maintaining large numbers of accessions.
- Support increased financing and improved data management.
- Encourage greater coordination among donors/international organizations.
- Foster increased regional coordination, collaboration and knowledge sharing.
- Promote on-the-job training.

PA 9. Supporting plant breeding, genetic enhancement and base broadening efforts

- Promote long-term, nationally supported breeding programmes.
- Encourage regional cooperation for capacity development/ knowledge exchange, including through Treaty mechanisms.
- Strengthen collaboration between extensionists, breeders, researchers and genebanks.
- Support capacity development for the use of modern technologies, such as high throughput genotyping and phenotyping to undertake Genome Wide Association studies (GWAS) for establishing marker-trait associations.
- Support longer-term initiatives for breeding and crop improvement.
- Promote initiatives for increasing awareness and capacity development through:
 - public–private partnerships;
 - increased community involvement (Participatory Plant Breeding/Participatory Varietal Selection/Farmer Field Schools); and
 - improved collaboration among plant breeders, extensionists and national genebanks.
- Highlight need for sources of quality germplasm for breeding improved varieties.

PA 10. Promoting diversification of crop production and broadening crop diversity for sustainable agriculture

- Support policies that promote diverse and sustainable systems.
- Promote linkages among CSBs, farmers and national institutions.
- Promote public awareness of the advantages of crop diversification.
- Foster the development of training/education curricula, including for:
 - good agricultural practices;
 - improved understanding of agricultural ecosystems functioning, soil health; and
 - cultivation of varieties tolerant to various stresses to reduce vulnerability.
- Increase awareness and promotion of the use of NUS, including through initiatives such as agritourism.

PA 11. Promoting development and commercialization of all varieties, primarily farmers' varieties/landraces and underutilized species

- Strengthen capacity development on the use of important/ endemic species, such as FV/LR, NUS and WFP.
- Promote commercialization of local wild and cultivated PGRFA using approaches such as e-commerce.
- Support CSBs in developing FVs/LRs.

PA 12. Supporting seed production and distribution

- Support improvement of seed certification procedures (International Seed Testing Association or establish local standards for quality seeds) especially for FV/LR.
- Promote South-South cooperation for capacity development/knowledge exchange, including through Treaty mechanisms.
- Foster capacities of farmers and local communities in producing quality seeds on-farm (community seed enterprises).
- Support efficient national seed systems (production, distribution and access to quality seeds and planting materials).
- Support involvement of local communities, especially with regard to processes for the registration of FV/LR.

SECTION 4: HUMAN AND INSTITUTIONAL CAPACITIES

PA 13. Building and strengthening national programmes

- A comprehensive national strategy for the conservation and sustainable use of PGRFA should be established and regularly revised, as needed, and eventually complement existing National Biodiversity Strategies and Action Plans (NBSAPs) required by the Convention on Biological Diversity. This strategy should specifically address both cultivated and wild species relevant to PGRFA. It should also ensure the implementation and compliance with relevant international agreements and instruments, including the updated Second Global Plan of Action (Second GPA) and the International Treaty on PGRFA, as well as contribute to the Commission's Framework for Action on Biodiversity for Food and Agriculture and the Montreal-Kunming Global Biodiversity Framework.
- Regulations and policies governing PGRFA should be coherent and harmonized to facilitate the achievement of their primary objectives.
- Strengthening collaboration and synergies among stakeholders within the national programme is essential. In many countries, national programmes resemble institutional programmes run by individual institutions. They should, instead integrate all relevant stakeholders, including farmers' organizations. Stakeholders' integration increases the opportunities to maximize progress toward the Second GPA's main objectives.
- The representations of different stakeholders' categories, including farmers' organizations, in national PGRFA advisory and decision-making bodies and relevant initiatives should be sought.
- National programmes should have the adequate skills and resources to address the tasks and priorities outlined in the updated Second GPA.

PA 14: Promoting and strengthening networks for PGRFA

- Financial sustainability and incorporation should be addressed in national programmes, which should foresee the necessary resource allocation to ensure network continuity.
- Networks can serve as mechanisms for the development of inter-institutional project proposals to ensure network sustainability.
- Regional and international networks can contribute to filling gaps in national programmes and contribute to the implementation of the GPA.

PA 15: Constructing and strengthening comprehensive information systems for PGRFA

- Expertise in information management and bioinformatics as well as necessary digital infrastructure should be secured.
- Collaboration among government agencies, research institutions and international platforms to create robust, inter-operable and standardized information systems should be promoted and enhanced (one-stop shop)
- Updated inventories of CWR, WFP and farmers' varieties should be made accessible through information systems.
- Existing international and regional platforms including GLIS, WIEWS, GENESYS, GRIN-Global and other relevant platforms (e.g. ASEAN Food Security Information System - AFSIS) should be leveraged to improve national PGRFA information systems.

PA 16: Developing and strengthening systems for monitoring and safeguarding genetic diversity and minimizing genetic erosion of PGRFA

- Efforts are needed to improve documentation and accessibility of information on CWR and WFP, FV/LR and underutilized species as these resources continue to be neglected and at risk.
- Early warning systems for PGRFA should be established at the national level.

- Improved, standardized methodologies and indicators are needed for assessing inter- and intra-specific diversity and minimizing genetic erosion, and the impact of associated drivers needs to be refined and applied to produce baseline data and monitor trends overtime.
- Complementary approaches should be used for assessing and monitoring wild PGRFA, such as ecogeographic tools and IUCN methodologies.

PA 17: Building and strengthening human-resource capacity

- Differences in the gaps in capacities should be reduced across the region.
- Focus is needed on the shortage of qualified professionals due to staff turnover and difficulties in hiring young people to replace retiring staff.
- Attractive career paths and recognition strategies are necessary to retain professionals in the field of PGRFA.
- National strategies, policies or programmes should address capacity development, ensuring sufficient availability of formal training programs in PGRFA conservation and sustainable use.
- Modern infrastructure facilities are needed.
- Science curricula of secondary, graduate and post-graduate levels in all countries should include "PGRFA conservation and sustainable use". On-the-job training and short training courses should be developed to complement academic courses.
- Development of interdisciplinary research teams should be fostered to address complex PGRFA challenges and relationships with world-class institutions facilitated.

PA18: Promoting and strengthening public awareness of the importance of PGRFA

- Increasing the understanding of the role of PGRFA for food security among policymakers, local authorities, and the general public is important for the successful establishment and implementation of national PGRFA programmes.
- Communication skills of national programme staff should be enhanced.
- Education plays a key role for a built-in awareness of PGRFA in society. Innovative, contemporary learning tools should be used starting from the early educational levels.
- Collaboration with all media and establishment of symbolic celebrative events should be sought.

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