Policies, programmes and activities related to biodiversity for food and agriculture

Reports from international instruments and organizations

1. Contact information

<table>
<thead>
<tr>
<th>Name and position of respondent</th>
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<tbody>
<tr>
<td>Name of organization</td>
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<tr>
<td>Geographical coverage of your organization</td>
<td>Global</td>
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</tbody>
</table>

2. Components of biodiversity for food and agriculture covered by your organization

Note: For a complete definition refer to Annex 1 of: http://www.fao.org/nr/cgrfa/biodiversity/guidelines/en/

Sectoral genetic resources for food and agriculture

- Animal genetic resources [x]
- Aquatic genetic resources [ ]
- Forest genetic resources [ ]
- Plant genetic resources [x]

Associated biodiversity of relevance to food and agriculture

- Micro-organisms (including bacteria, viruses, protists and fungi) [ ]
- Invertebrates (including insects, spiders, worms) [ ]
- Vertebrates (including amphibians, reptiles and non-domesticated birds and mammals) [ ]
- Wild and cultivated terrestrial and aquatic plants other than crop wild relatives [ ]
Please provide details on the components of biodiversity for food and agriculture involved (species, breeds, varieties):

Bioversity International focuses on plant genetic resources and agricultural biodiversity, with strong thematic concentrations on Tree Genetic Resources and Musa Genetic Resources as well as Crop Wild Relatives and Neglected and Underused Species, and the use of diversity in farms and surrounding landscapes to improve people’s lives. In terms of species, we can single out here the following which are part of current projects: cereals (barley, millets, sorghum, buckwheat, oat etc as well as rice, wheat, maize); tubers (sweet potato, etc); legumes (various beans, chickpeas, forage legumes, etc) oilseeds, spices and vegetables; bananas and plantains; various wild tree sp. Vitellaria paradoxa; Parkia biglobosa; Khaya senegalensis; crop wild relatives (various); various tropical and temperate fruit trees and tree crops (apple, walnut, mango, cacao, etc). Furthermore, we make discreet contributions to work on conservation and use of AnGR.

PRIORITY AREA 1: ASSESSMENT AND MONITORING

1. Does your organization implement or support the implementation of projects or programmes that contribute to the assessment of the status of biodiversity for food and agriculture?

Yes ☐

No ☐

If yes, please provide details on the countries and species involved and indicate whether the population trends of these species are monitored:

e.g., in Mauritius, Zambia and South Africa we are involved with national partners to build capacity in monitoring population trends for priority crop wild relatives: such monitoring is a strong feature in our work on tree genetic resources (mentioned below); agrobiodiversity assessment undertaken in dryland areas in India and Mali and Ghana (as part of CRP Drylands and US AfricaRising respectively)

2. Is your organization involved in surveying and monitoring population sizes of and/or threats to associated biodiversity species that are known to contribute to regulating or supporting ecosystem services in and around agricultural and food production systems?

Yes ☐

No ☐

If yes, please provide details on the countries and species and ecosystem services involved:

e.g., by developing DNA timber tracking tools and a conservation strategy for African mahogany (Khaya senegalensis) in West Africa; performing studies on Brazil nut (Bertholletia excelsa) in Peru; etc.

3. Is your organization involved in surveying and monitoring population sizes of and/or threats to wild food species?

Yes ☐

No ☐

If yes, please provide details on the countries and species involved:

e.g., in Burkina Faso for Vitellaria paradoxa and Parkia biglobosa; in Uzbekistan, Kyrgyzstan and Tajikistan spatial threat analysis for temperate fruit tree wild relatives and semi-domesticated; etc.
4. Has your organization identified major obstacles to assessing and monitoring components of biodiversity for food and agriculture that are part of its mandate?

   Yes  
   No  

If yes, please list these obstacles, being as specific as possible regarding the species involved:

There is no consistent long-term monitoring to track changes in agrobiodiversity. One reason for this lack of broad-based evidence is the complex nature of measuring diversity across different scales and levels (genetic, species, agroecosystems, locations, and points in time). But even if that challenge is surmounted, monitoring the existence and trajectories of agrobiodiversity is not enough. We need to know also if it is entering the market place, whether male and female farmers have access to diverse planting materials and what is ending up on people’s plates (a connection with sustainable use).

5. What are the priority measures that need to be taken to address these obstacles?

Bioversity is working to identify a set of measures, sufficient to provide insights into agrobiodiversity trends in food, production, seed and conservation systems, which are robust, relevant and cost effective, an Agrobiodiversity Index.

6. Please describe any additional activities relevant to the implementation of Priority area 1: Assessment and monitoring

PRIORORITY AREA 2: CONSERVATION AND SUSTAINABLE USE

Conservation

1. Does your organization take or support actions to protect components of biodiversity for food and agriculture that are at risk from climate change, invasive alien species and natural or human-induced disasters?

   Yes  
   No  

If yes, please provide details on the countries and species involved, the actions taken, the impacts and the lessons learned:

   e.g., collections in Nepal to restock community seed banks (post-earthquake); supporting National Strategic Action Plans for CWR in South Africa, Zambia and Mauritius;

2. Does your organization implement or support the implementation of conservation measures for associated biodiversity and/or wild food species?

   In situ  
   Yes  

Ex situ

Yes  

No  

If yes, please provide details on the countries, measures and species involved:

e.g., Community Seed Banks in inter alia Nepal, South Africa, Uganda, Cambodia, Laos, India, Peru; CWR in SADC in protected areas; capacity building on the conservation and use of forest genetic resources (for instance, in Sub-Saharan Africa); in Central Asia support national partners to identify valuable populations for conservation using phenotypic and molecular approaches for temperate fruit trees; in Indonesia, India, Malaysia, and Thailand programming around conservation and sustainable use of tropical fruit tree species.

3. If your organization maintains ex situ collections of biodiversity for food and agriculture components could you please provide further information on these collections?

We operate the International Transit Center for Musa in Leuven Belgium, hosted at KUL -- 1,515 accessions in vitro, 985 accessions cryopreserved, with associated research (molecular and phenotypic characterization, cryopreservation protocols etc.)

4. Has your organization identified major obstacles to enhancing the conservation of biodiversity for food and agriculture, and in particular of associated biodiversity and wild foods?

Yes  

No  

If yes, please provide details:

Wild tree species are not adequately or effectively conserved in much of the world and provide essential ecosystem services important to food and agriculture. In situ and on farm conservation challenges in general and related to incentives and private benefits.

5. What are the priority measures that need to be taken to address these obstacles?

Bioversity proposes to extend the network of conservation sites for trees, following the natural distribution of tree species shared by Europe and neighbouring countries, including North Africa, Armenia, Ukraine, as well as to other developing country regions (Africa, Latin America, Central Asia). As regards incentives, Bioversity is pioneering work on studying incentives for on farm and in situ conservation practice and supportive policies (spearheading research on “PACs” -- payment for agrobiodiversity conservation services)

Sustainable use

6. Does your organization promote management practices that support the maintenance and use of biodiversity for food and agriculture?

Note: For examples of such practices, please refer to Annexes 5 and 6 of http://www.fao.org/nr/cgrfa/biodiversity/guidelines/en/

Yes  

No

If yes, please provide details on the countries and practices involved:

Array of on-farm programs looking at intra-specific and inter-specific diversity, conservation through sustainable use, and sustainable use for improved human nutrition of various spp in India, Armenia, Uzbekistan, Indonesia, Sri Lanka, Turkey, Brazil, Kenya, Bolivia, Nepal, China, Ecuador, Morocco, Uganda, Tanzania, Burundi, DRC, Rwanda, etc.

7. Does your organization promote the application of ecosystem, landscape and/or seascape approaches?

Yes

No

If yes, please provide details on the countries and approaches involved:

e.g., studies on forestry management practices to enhance livelihoods and sustain forests in Nicaragua and Guatemala; research on conservation and sustainable use of agricultural biodiversity to improve regulating and supporting ecosystem services in agriculture production in Uzbekistan; studies on the use of agrobiodiversity for ecosystem service restoration in Ethiopia; etc. Bioversity is involved in the global 20x20 initiative

8. Does your organization implement or support the implementation of projects or programmes on the use of biodiversity for food and agriculture to cope with climate change, invasive alien species, or natural or human-made disasters?

Yes

No

If yes, please provide details:

Bioversity is implementing the global Seeds for Needs program (citizen science and participatory variety selection for climate adapted traits) in 14 countries in Central America, South East Asia, South Asia and East Africa. Bioversity is pioneering this approach with smallholder farmers to show how agricultural biodiversity can minimize the risks associated with climate change. Our focus is on deploying existing diversity to farmers from wherever it is found, whether in genebanks, plant breeding programs or in their own fields. Partnerships and word-of-mouth have helped increase participation to 15,000 farmers in just three years.

9. Does your organization implement or support the implementation of projects or programmes on the maintenance and use of traditional knowledge of associated biodiversity and wild foods?

Yes

No

If yes, please provide details:

Regularly in projects, as an integral aspect of our modus operandi; furthermore, Bioversity International is the host institute of The Indigenous Partnership for Agrobiodiversity and Food Sovereignty; we work with GIAHS in sites with indigenous communities in China, Philippines and Tunisia.
10. Has your organization identified any major obstacles to improving the sustainable use of biodiversity for food and agriculture, and in particular of associated biodiversity and wild foods?

Yes ☐

No ☐

If yes, please list and describe them:

There is a notable gap in the research and value chain development oriented towards neglected and underused crops and species (NUS), which make up a large proportion of the species that local stakeholders want Bioversity to concentrate on. Locally important NUS, or orphan crops, hold great potential for improving nutritional status and climate change adaptation but the dearth of research on conservation and use, and breeding improved varieties, inhibits reaching the full potential of these species.

11. What are the priority measures that need to be taken to address these obstacles?

Networking on PGRFA: to foster alliances for PGRFA on topics such as CWR, On farm management, and NUS

Access and benefit-sharing

12. Does your organization contribute to the development of mechanisms to improve access to and ensure the fair and equitable sharing of benefits arising from the utilization of biodiversity for food and agriculture?

Yes ☐

No ☐

If yes, please provide details on the countries, mechanisms and species involved:

e.g., in Burkina Faso, Bhutan, Cote d'Ivoire, Costa Rica, Guatemala, Nepal, Rwanda and Uganda -- implementing project on Strengthening national capacities to implement the International Treaty of PGRFA; e.g., in community seed banks in South Africa, Nepal assuring ABS through farmers’ seed systems; work on Improving Seed Systems for Smallholders Food Security in Burkina, Bolivia, Nepal, Uganda and Uzbekistan (various crops);

13. Please describe any additional activities relevant to the implementation of Priority area 2: Conservation and sustainable use.

Coordination support of networks of conservation actors: MusaNET (banana and plantain), CACAONET (cacao), COGENT (coconut), and tree genetic resources regional networks: SAFORGEN, LAFORGEN, APFORGEN, EUFORGEN

PRIORITY AREA 3: POLICIES, INSTITUTIONS AND CAPACITY

1. Does your organization support countries in developing, reviewing and adjusting their national policies affecting the conservation and sustainable use of biodiversity for food and agriculture, and in particular of associated biodiversity and wild foods?

Yes ☐
2. Does your organization contribute to the development of regulatory frameworks or legislation for biodiversity for food and agriculture, and in particular for associated biodiversity, wild foods and ecosystem services?

Yes [ ] No [ ]

If yes, please provide details and specify the countries or regions involved:

Yes, with strong emphasis on ITPGRFA and Nagoya Protocol and National Seed policy in all of the countries listed in previous sections.

3. Does your organization collaborate with other stakeholders involved in the management of biodiversity for food and agriculture (e.g. farmers, fisher folk, forest dwellers, the breeding industry, government agencies, research institutes and civil society organizations)?

Yes [ ] No [ ]

If yes, please provide details:

Regularly in projects as an integral part of our modus operandi.

4. Does your organization implement or support the implementation of programmes to increase public awareness on the roles and values of associated biodiversity and ecosystem services in and around food and agriculture production systems?

Yes [ ] No [ ]

If yes, please provide details:

Regularly in projects as an integral part of our modus operandi.

e., CWR NSAPs in SADC; Research around policy incentives for ecosystem services and agricultural biodiversity conservation in Peru and Mexico; in Burkina Faso, Bhutan, Cote d'Ivoire, Costa Rica, Guatemala, Nepal, Rwanda and Uganda -- implementing project on Strengthening national capacities to implement the International Treaty of PGRFA; in Madagascar and Benin supporting mutually supportive implementation of the ITPGRFA and Nagoya Protocol; Brazil, Kenya, Sri Lanka, Turkey, Benin, Cameroon, Ghana, Mali, Senegal and Uganda work with national stakeholders and build capacity around use of agricultural biodiversity for improvement in nutrition and health. For instance, our work in this area directly contributed to: Ordinance No. 163 on Sociobiodiversity that was signed in Brazil as a results of the Biodiversity for Food and Nutrition (BFN) Bioversity/UNEP/FAO/GEF project. This is the first document and policy of its kind in Brazil. The Ordinance means that "Brazilian Sociobiodiversity Native Food Species of Nutritional Value" are now officially defined and recognized. Sixty four of the BFN Project’s prioritized species appear on the list.
5. Does your organization implement or support the implementation of training or capacity-building programmes for the management of associated biodiversity and ecosystem services in and around food and agriculture production systems?

Yes  
No

If yes, please provide details and specify countries involved:

Regularly in projects as an integral part of our modus operandi; we have specific capacity building work with Universities and NARS in Sub-Saharan Africa focusing on their interest in expanding the curriculum around neglected and underused species; we work extensively through networks for Musa genetic resources, Tree genetic resources, Cacao genetic resources and Coconut genetic resources to increase capacity of network members. In SADC region we have implemented two regional training events focusing on conservation and use of CWR.

6. Has your organization identified priorities for future capacity-building and education on associated biodiversity and ecosystem services in and around food and agriculture production systems?

Yes  
No

If yes, please provide details:

Most of our projects (mentioned above) produce training and capacity-strengthening deliverables while surfacing at their conclusion ongoing needs among stakeholders and participants. The applied use of agriculture biodiversity to nutrition and livelihoods is but one example of an area for capacity-building and education among stakeholders in the health and rural development spheres.

7. Please describe any additional activities relevant to the implementation of Priority area 3: Policies, institutions and capacity.

There is a gap in the mutually supportive implementation of the ITPGRFA and Nagoya Protocol globally. Bioversity is investing considerable efforts to work with countries and CGIAR centers to develop best bets for implementing the ABS provisions of the Treaty and the Nagoya Protocol in tandem. This is an ongoing focus.

PRIORITY AREA 4: REGIONAL AND INTERNATIONAL COOPERATION

1. Has your organization contributed to the establishment or strengthening of regional and international research and/or education programmes to assist countries to better manage biodiversity for food and agriculture?

Yes  
No

Please provide details:

Bioversity is a research for development organization with a mission that delivers scientific evidence, management practices
and policy options to use and safeguard agricultural and tree biodiversity to attain sustainable global food and nutrition security. Thus this is our core mandate. Specific work for regional and global network coordination around crops, as mentioned above. Global and multi-country projects that facilitate regional and international exchange and learning, such as on ITPGRFA capacity building.

2. Has your organization contributed to the establishment or strengthening of regional and international programmes to assist countries to obtain training and technologies or develop information systems related to biodiversity for food and agriculture and related ecosystem services?

   Yes ☐
   No ☐

Please provide details:

A leadership role in crop and agronomy ontologies, trait dictionaries etc. Specific attention to bio-informatics related to banana, cacao and coconut collections.

3. Please describe any additional activities relevant to the implementation of Priority area 4: Regional and international cooperation

   Technical assistance provision to address implications of the Nagoya Protocol for the CGIAR Centers. Technical assistance to National Focal Points for monitoring and reporting on the implementation of the Second Global Plan of Action on Plant Genetic Resources for Food and Agriculture. Technical assistance pertaining to the FAO’s Global Plan of Action for the Conservation, Sustainable Use and Development of Forest Genetic Resources, with important implications to ecosystem services.

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