

February 2013

E



منظمة الأغذية
والزراعة للأمم
المتحدة

联合国
粮食及
农业组织

Food and
Agriculture
Organization
of the
United Nations

Organisation des
Nations Unies
pour
l'alimentation
et l'agriculture

Продовольственная и
сельскохозяйственная
организация
Объединенных
Наций

Organización
de las
Naciones Unidas
para la
Alimentación y la
Agricultura

COMMISSION ON GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Item 9 of the Provisional Agenda

Fourteenth Regular Session

Rome, 15 - 19 April 2013

SUBMISSIONS BY INTERNATIONAL ORGANIZATIONS ON THE PRIORITIZED THEMES OF THE SESSION

TABLE OF CONTENTS

	<i>Para.</i>
I. Introduction	1 – 4
II. Submissions on the prioritized themes of the Commission's Fourteenth Regular Session	
2.1 <i>The State of the World's Biodiversity for Food and Agriculture</i>	5 - 40
2.2 Sectorial matters	
2.2.1 Animal genetic resources	41 – 48
2.2.2 Aquatic genetic resources	49 - 51
2.2.3 Forest genetic resources	52 – 56
2.2.4 Micro-organisms and invertebrates	57 - 58
2.3 Cross-sectorial matters	
2.3.1 Access and benefit-sharing for genetic resources for food and agriculture	59 – 77
2.3.2 Climate change and genetic resources for food and agriculture	78 – 84
2.3.3 International targets and indicators for biodiversity for food and agriculture	85 – 87
2.3.4 Biodiversity and nutrition	88 - 91

This document is printed in limited numbers to minimize the environmental impact of FAO's processes and contribute to climate neutrality. Delegates and observers are kindly requested to bring their copies to meetings and to avoid asking for additional copies. Most FAO meeting documents are available on the Internet at www.fao.org

III.	Submissions relevant to other areas of the Commission's Multi-Year Programme of Work	92 – 106
------	--	----------

Appendix: Status in relation to the International Union for the Protection of New Varieties of Plants (UPOV) – as of November 19, 2012

I. INTRODUCTION

1. At its Thirteenth Regular Session, the Commission thanked the international organization and instruments for their submissions and requested its Secretary to continue to seek inputs on prioritized themes of the regular sessions from international organizations and to make them available to the Commission for its consideration.¹

2. On 15 October 2012, the Director-General of FAO invited international organizations, including inter-governmental and non-governmental organizations, to provide focused information on their programmes, activities and policies relevant to the prioritized themes of the Commission's Fourteenth Regular Session:

The State of the World's Biodiversity for Food and Agriculture

- Key issues and preparation of *The State of the World's Biodiversity for Food and Agriculture*

Animal genetic resources

- Review of implementation of Interlaken Outcomes

Aquatic genetic resources

- Review scoping policy analysis to identify gaps and opportunities related to aquatic genetic resources

Forest genetic resources

- Presentation of *The State of the World's Forest Genetic Resources*

Micro-organisms and invertebrates

- Review of key issues on micro-organisms and invertebrates

Cross-sectorial matters

- Consideration of the need for and modalities of access and benefit-sharing arrangements for genetic resources for food and agriculture
- Consideration of finalized roadmap or work programme on climate change and genetic resources for food and agriculture
- Review of all relevant international targets and indicators for biodiversity for food and agriculture
- Review of key issues on biodiversity and nutrition

3. The following international organizations provided submissions in response to the invitation by the Director-General: CAB International (CABI); Convention on Biological Diversity (CBD); International Atomic Energy Agency (IAEA); Inter-American Institute for Cooperation and Agriculture (IICA); International Institute for Environment and Development (IIED); International Seed Federation (ISF); Practical Action; Slow Food; United Nations Development Programme (UNDP); and International Union for the Protection of New Varieties of Plants (UPOV).

4. The submissions have been grouped according to the prioritized themes of the Commission's Fourteenth Regular Session and are presented in the alphabetical order of the organizations under each theme. The submissions are given in the language in which they were received. Reports submitted by the Global Crop Diversity Trust and the CGIAR Consortium are given in the documents *Report from the Global Crop Diversity Trust to the Commission on Genetic Resources for Food and Agriculture*,² and *Report from the CGIAR Consortium of International Agricultural Research Centres to the Commission on Genetic Resources for Food and Agriculture*,³ respectively.

¹ CGRFA-13/11/Report, paragraph 116.

² CGRFA-14/13/Inf.21.

³ CGRFA-14/13/Inf.22.

II. SUBMISSIONS ON THE PRIORITIZED THEMES OF THE COMMISSION'S FOURTEENTH REGULAR SESSION

2.1 *The State of the World's Biodiversity for Food and Agriculture*

Key issues and preparation of The State of the World's Biodiversity for Food and Agriculture

CABI

5. CABI improves people's lives by providing information and applying scientific expertise to solve problems in agriculture and the environment. Our key activities include scientific publishing, development projects and research, and microbial services. CABI's work focuses on cutting crop losses through helping farmers manage the pests and diseases that affect their crops and by working with them to improve the quality of their produce. We support agricultural researchers around the world by providing comprehensive, global coverage of the latest research via our bibliographic databases. In addition, we publish multimedia resources which provide practical guidance on managing pests and diseases. CABI can thus contribute to common goals.

IAEA

Background

6. According to the Convention on Biological Diversity (CBD), biodiversity "includes all plants, animals, microorganisms, the ecosystems of which they are part and the diversity within species, between species, and of ecosystems" (CBD, 2003, p. 1). Thus biodiversity refers to the number and variety of species, of ecosystems, and of the genetic variation contained within species.

7. During the Ages, Life has always had to deal with a changing climate on Earth. Speciation through evolution has been and is being shaped by the need to adapt to new patterns of temperature and rainfall. Thus climate variation is in phase with the survival of ecosystems and their functions. But currently, climate variability and change, and its consequences, might be amongst the most important challenges to biodiversity and the functions of ecosystems. In many model simulations, they are projected to become an increasingly important driver of change in the coming decades.

8. Amongst the reasons why plants and animals are less able to adapt to the current phase of global warming is the very rapid pace of change. A changing global climate will threaten species and ecosystems. The main adverse impacts of climate change on agriculture will most probably include temperature variability, different rainfall patterns and increasing rates of evaporation. It has recently been estimated that developing countries will bear 70–80% of the costs of climate change damage, with agriculture being the most affected sector.

9. It is anticipated that over the next century, the rise in average global temperatures will be faster than anything experienced by the planet for at least 10,000 years. Many species will simply be unable to adapt quickly enough to the new conditions, or to move to regions more suited to their survival. The distribution of species (biogeography) is largely determined by climate, as is the distribution of ecosystems and plant vegetation zones (biomes). Climate change may simply shift these distributions but, for a number of reasons, plants and animals may not be able to adjust. The pace of climate change almost certainly will be more rapid than most plants are able to migrate. The presence of roads, cities, and other barriers associated with human presence may provide no opportunity for distributional shifts. Some species and ecosystems are likely to be eliminated by climate change. Agricultural production likely will show regional variation in gains and losses, depending upon crop and climate. All species have specific food and habitat needs. The more specific these needs and localized the habitat, the greater the vulnerability of species to loss of habitat to agricultural land, livestock, roads and cities. In the future, the only species that survive are likely to be those whose habitats are highly protected, or whose habitat corresponds to the degraded state associated with human activity (human commensals). Extinction is a natural event and, from a geological perspective, routine: most species that have ever lived have gone extinct. The average rate over the past 200 million years is 1-2 species per year, and 3-4 families per million years. The average duration of a

species is 2-10 million years (based on the last 200 million years). There have also been occasional episodes of mass extinction, when many taxa representing a wide array of life forms have gone extinct in the same blink of geological time. Arguably, in modern times, species and ecosystems are threatened with destruction to an extent rarely seen in earth history due to human actions. Model simulations and estimations of current and future extinction rates, based on well-documented relationships between the number of species in a region and habitat area, and on reasonably well-known rates of habitat loss (e.g. current rates of loss of tropical forest of estimated 1.8% per year), calculate that species extinction rates may roughly reach 0.5% annually. Extrapolated to the year 2020, roughly 20% of remaining species are bound to disappear. Simply using the most conservative values, and assuming the true biodiversity of tropical forests is roughly 10 million species, the projected rate of loss of species is 27,000 per year, and three / hour. Probably only during the handful of mass extinction events have so many species been threatened, in so short a time.

10. Possible policy responses can be divided into mitigation and adaptation measures. Both strategies are needed, mitigation in order to stabilise the greenhouse gas concentrations in the atmosphere, and adaptation in order to adjust to changes that have already occurred or cannot be avoided.

The State of the World's Biodiversity for Food & Agriculture, Key issues and preparation of The State of the World's Biodiversity for Food & Agriculture

11. As far as biodiversity is concerned, mutation induction is the tool of choice to broaden the adaptability of food crops to dynamic agro-ecologies. Coupled with selection, it remains the cleanest and most inexpensive way to create varieties by changing single characters without affecting the overall phenotype. It is ubiquitously applicable and transferrable as proven by the more than 3200 officially released mutant varieties from over 200 plant species in over 90 countries. Breeders use mutation induction to broaden the genetic base of germplasm, and use the mutant lines directly as new varieties or as sources of new variation in breeding programs.

12. The International Atomic Energy Agency (IAEA), through its Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture (AGE/NAFA) and Department of Technical Cooperation, is actively supporting the Member States in adaptation strategies based on mutation induction and efficiency enhancing biotechnologies through various coordinated research (CRPs) and technical cooperation project (TCPs). Major thematic areas of the Plant Breeding and Genetics (PBG) sub-program are "Crop Improvement for high yield and enhanced adaptability to climate change" with major activities aimed at fostering crop improvement as well as biodiversity protection, through applying mutation induction and efficiency enhancing biotechnologies, and "Integrated soil-water-plant approaches to enhance food production and biomass productivity" with special emphasis on enhancing Member States' capacities to advance food security through climate change mitigation and adaptation using integrated soil-plant approaches.

13. A major challenge is to weatherproof existing crop production systems. In order to make better use of both productive and marginal lands, it is essential to select, evaluate and develop crop genotypes that can flourish under conditions of high temperature, low rainfall, and flooding, or where soils suffer from salinity or acidity or have become nutrient deficient. IAEA through AGE/NAFA develops Member States' capacities to incorporate useful mutants in breeding programmes, including breeding programmes in which the farmers participate in order to ensure acceptance and facilitate the release of new varieties.

14. Local crop production systems are often based on orphan/neglected/underutilized crops, which are a diverse set of plant species ranging from cereals such as tef, the millets, grain legumes such as cowpeas and bambara, root and tubers such as yam, to indigenous landraces of fruits and vegetables, such as quinoa. These crops tend to be of local or even regional importance, being critical for food security for a significant number of poor farmers in developing countries by providing needed calories and nutrients. IAEA's activities through AGE/NAFA assists in generating induced mutants in a range of orphan crops using in vitro and in vivo techniques coupled to mutation induction, allowing for selection and evaluation of new genotypes for breeding.

15. The details of the CRPs related to the issue of crop adaptability and supporting biodiversity implemented as part of the sub-program are as follows:

- i. “Approaches to improvement of crop genotypes with high water and nutrient use efficiency for water scarce environments” focusses on assessing resources, in order to define and adapt best fit soil and water management practices depending on the available mutant varieties to be extended in 9 Member States from Asia, Africa and Latin America.
- ii. “Climate proofing of food crops: genetic improvement for adaptation to high temperatures and drought prone areas and beyond” is being implemented in 11 developing countries across Asia, Africa and Latin America as well as in Australia, 2 Member States in Europe and the USA. The project focusses on improving the grain yields of rice and common bean (essential staple foods in the diets of millions of impoverished and vulnerable populations) to high temperature stress in the face of climate change.
- iii. “Integrated utilization of cereal mutant varieties in crop/livestock production systems for climate smart agriculture” has the objective to develop and assess dual purpose cereal cropping systems (food & feed) in 9 Member States from Europe, Asia, Africa and Latin America.
- iv. As part of the sub-program activities, PBG Laboratory and Section maintain, update and develop the Joint FAO/IAEA Mutant Varieties and Genetic Stocks Database, currently harbouring information on more than 3200 officially or commercially released mutant varieties from more than 200 plant species worldwide.

16. Food security and adaptation to climate variability and change are being addressed through the implementation of 1 Interregional, 7 Regional (1 in Latin America, 2 in Africa and 4 in Asia & the Pacific) and 36 National TC projects from developing Member States worldwide. Further, TC projects implemented by the Agency’s Department of Technical Cooperation in association with the PBG sub-program are committed towards capacity building in Member States, through financial support for the establishment of mutation breeding and biotechnology laboratories, technology transfer and training personnel on mutation induction and efficiency enhancing biotechnologies. Researchers and professionals from Member States fellows are provided group training as well as individual training through the Regional TC and National TC projects respectively.

ISF

17. The global seed industry plays a vital role in efforts to increase food security, sustainable development and the conservation and sustainable use of plant genetic resources for food and agriculture (PGRFA). The International Seed Federation (ISF) (www.worldseed.org) represents the interests of the mainstream seed industry at a global level through interaction and dialogue with public and private institutions that have an impact on international seed trade. Supporting information exchange with important stakeholders like the Commission on Genetic Resources for Food and Agriculture (CGRFA) is consistent with the ISF’s mission. As such, we welcome the opportunity to provide the CGRFA with the information relevant to several prioritized themes identified in your letter.

The State of the World’s Biodiversity for Food and Agriculture

18. Seed companies that make up the membership of ISF engage in many activities relevant to preparation of the next *The State of the World’s Biodiversity for Food and Agriculture*, including:

- developing new varieties that provide farmers, producers and/or consumers with better products (higher yielding, improved nutrition or other quality characteristics and better performance)
- making new varieties available for further research and breeding, which provides significant, non-monetary benefits to farmers and plant breeders around the world
- sharing information, communicating seed industry positions and providing explanations in an effort to better understand private sector seed producers perspectives; and
- co-operating with public authorities and research facilities to support and promote the conservation and sustainable use of PGRFA in specific project areas, for example:

- i. Support National and International Gene banks
 - Evaluation, multiplication and characterization of national gene bank accessions, e.g. 10-15% of the budget of the Dutch gene bank comes from the private breeding sector
 - Participation in and support for collecting missions; in Azerbaijan and Armenia most recently
 - Financial support to develop internet access to information on the collection of vegetable PGRFA held in the AVRDC gene bank through SINGER
 - Active participation in various forage, field and vegetable crop networks to create national collections
 - Donate collections to national public gene banks e.g. radish germplasm collection to the USDA and cabbage to North Carolina State University; maize and wheat collections to the Multilateral System of the International Treaty
 - Direct financial support to the CIMMYT gene bank for a period of three years and the Global Crop Diversity Trust

- ii. Capacity Building
 - Establishment of horticultural school programme in Guatemala
 - Establishment of a vegetable breeding company in Tanzania for the local/regional market
 - Development of laboratories and support to conduct seed analysis in Morocco
 - Financial support to Vavilov-Frankel Fellowship Programme and others on biodiversity and plant breeding
 - Support post-doctoral and visiting scientists within breeding and genetic programs.
 - Technical expertise for program reviews related to conservation of PGRFA
 - Provide extension services on vegetable cultivation to local communities

- iii. Sustainable Use of PGRFA
 - Plant breeding as variation is key to breeding programmes
 - Participation in the Germplasm Enhancement of Maize (GEM) Project to broaden the germplasm base of maize
 - In-kind support and services for the development of GRIN information
 - Participation in international consortia e.g. International Maize Improvement Consortium in India
 - Support for tomato breeding programme in Bolivia
 - Training in breeding and access to high yielding lines to improve cold-tolerance in maize grown in high elevations (3400 m – 4000 m) in Peru
 - Provision of germplasm, breeding technologies and drought genes to projects funded by the Gates Foundation to develop drought resistant hybrids for Sub Saharan Africa

PRACTICAL ACTION

19. Practical Action,⁴ is a specialist international development NGO founded in 1966. We work on a range of technological issues with and in support of communities in developing countries, from regional offices in East Africa (Nairobi), Southern Africa (Harare), South America (Lima) and South Asia (Colombo). In addition there are national offices in Bangladesh, Nepal and Sudan. Our headquarters are in the UK.

20. We have worked on agricultural biodiversity issues for more than 20 years with the organisations of smallholder and peasant farmers, pastoralists, artisanal fisherfolk and other small-scale food providers, who, over countless generations, have developed, *in situ*, the agricultural biodiversity that feeds the world. The focus of our work has been to support and defend, through normative processes, practical projects and advocacy, their biodiverse, resilient, ecological production

⁴ Practical Action, was formerly known as the Intermediate Technology Development Group or ITDG, founded by the prescient economist Dr E F Schumacher, author of ‘Small is Beautiful’, and father of the appropriate technology movement.

systems, which both generate and depend upon agricultural biodiversity and are an essential component of food sovereignty.

21. In support of normative work, we have been active participants in the work of the Commission on Genetic Resources for Food and Agriculture (CGRFA) since its inception in 1983, including its Technical Working Groups. We have also been active in the development and implementation of the International Seed Treaty (IT PGRFA) including participation in the work of its Governing Body.

22. We are also principal participants in the Civil Society lobby at the Convention on Biological Diversity (CBD) – the CBD Alliance – on agricultural biodiversity issues see, for example, the Briefing for CBD/COP11 www.ukabc.org/cbdalliance-cop11agbiob-briefing-oct2012.pdf and ECO for World Food Sovereignty Day 2012 “Agricultural Biodiversity feeds the World: it provides food, improves health and well-being and regenerates the environment” www.ukabc.org/eco@cop11-7.pdf.

23. We were one of the six NGO governing bureau members of the World Bank/UN sponsored International Assessment of Agricultural Knowledge, Science and Technology for Development (IAASTD) and are active in following up the implementation of its Findings.

24. We participate in relevant Civil Society processes that defend agricultural biodiversity through national, regional and international networks including the UK Food Group and its UK Agricultural Biodiversity Community (UKabc); the European Peasant Seed network “Let’s Liberate Diversity”; the Agricultural Biodiversity Community – *unity in diversity* (abc); the europAfrica campaign, an EU funded consortium that works with the African farmers’ regional networks; the More and Better network; and the IPC for food sovereignty’s Agricultural Biodiversity Working Group.

25. *In our practical work* there are many examples of our work with local communities in defence of agricultural biodiversity conserved and developed *in situ* / on-farm, on the range and in inland and coastal waters.

- We support Andean alpaca keepers in Peru defending their high altitude, potato production systems, which sustain potato biodiversity in its centre of origin, through work that strengthens their livelihoods in the face of climate change.
- We have worked with pastoralist communities in Kenya to defend their livelihoods which depend on managing their diverse livestock breeds across very biodiverse semi-arid lands and their diverse sorghum varieties, which provide much of their grain.
- With coastal communities threatened by the incursion of industrial agriculture and fisheries in Sri Lanka we support their access to and management of biodiverse inland and coastal fisheries, coastal mangroves and help defend their highly biodiverse rice production systems.
- In Bangladesh we support local producers provide a wide range of vegetables in gardens which float on flood waters.
- In Zimbabwe and Kenya we have supported pioneering work in defending crop biodiversity through seed selection and seed fairs and other exchanges that increase the agricultural biodiversity maintained and developed by small-scale food producers.

26. *In our advocacy work* we have focused on promoting biodiverse systems that will secure future food. These depend on increasing the agricultural biodiversity in ecological food provision. This is an essential component in production systems that support the realisation of food sovereignty, which will defend the local food systems that currently provide food for most people in the world and could efficiently do so forever, given necessary protection, support and prioritisation.

27. We inform, educate and raise awareness of policy makers and the public about the increasing multiple threats, in terms of the agricultural biodiversity available to small-scale food producers and their access to the resources needed for production. This is because of, *inter alia*, laws, intellectual property rights, corporate power, commercial contracts, and technologies that restrict access and facilitate monopoly control over these essential genetic resources for food and agriculture. Furthermore, we advocate that the development of technologies that impact negatively upon, or disrupt the genomes of, traditional and locally-improved varieties of food crops, livestock breeds and aquatic species, need to be closely monitored and their use prevented.

28. **For CGRFA 14** we are especially concerned that the process for the preparation of a State of the World's Agricultural Biodiversity for Food and Agriculture (SoW BFA), a priority in the MYPOW of the CGRFA, should be primarily based upon the experience and perspective of those who sustain and develop the world's agricultural biodiversity – the small-scale food providers themselves. We would urge the Commission to use an inclusive process similar to that adopted by the Committee on World Food Security (CFS) to facilitate their inclusion in the preparation of the necessary inputs for both the SoWBFA and its follow up plan of action.

29. Since the formation of the CPGR 30 years ago and the CGRFA in 1995, with its expanded mandate, there has been yet further erosion of agricultural biodiversity, especially *in situ*, leading to a potentially perilous situation in terms of food provision, livelihoods and the environment. We believe it is essential to sustain all agricultural biodiversity and its related ecosystem functions, essential for securing food supplies and realising food sovereignty in an increasingly threatened social, economic and environmental context. We believe that it is very urgent for the CGRFA to endorse, propose and promote immediate actions in support of small-scale food providers, and their social organisations, who use, develop and conserve agricultural biodiversity and related ecosystem functions. This would, at long last, permanently reverse the life-threatening decline in agricultural biodiversity *in situ* and on-farm, on the range and in coastal and inland waters.

SLOW FOOD

30. The protection of biodiversity in the agricultural sector responds to the need to reconcile productive agriculture with ecosystem protection, whilst maintaining the complexity and genetic wealth of wild, domesticated and cultivated agricultural species nowadays and for the next generations. Slow Food wants to emphasise that it is essential to support small-scale local producers who use sustainable production systems reaffirming their fundamental role in safeguarding the agrobiodiversity, in avoiding the depletion of natural resources and in contributing to environmental protection at large. At the same time, Slow Food believes that it is fundamental to raise public awareness of the relevance of biodiversity to the lives of citizens, and the consequences of biodiversity loss at local, national and global level. For this reasons, Slow Food advocates at national, european and international level to ensure preserving diversity in agriculture.

UNDP

31. As part of its broad development mandate, UNDP has a large portfolio of work on biodiversity and ecosystems management, organized into three Signature Programmes, each addressing a distinct area in which UNDP is providing technical and policy advice to governments, and support in accessing finance, to achieve measurable results that promote inclusivity, sustainability and resilience—building on proven best practices and encouraging innovation for development. The three Signature Programmes contribute to the overall strategic objective to “Maintain and enhance the goods and services provided by biodiversity and ecosystems in order to secure livelihoods, food, water and health, enhance resilience, conserve threatened species and their habitats, and increase carbon storage and sequestration.”

32. Of particular relevance in relation to FAO's work is UNDP's Signature Programme 1 on “Integrating biodiversity and ecosystem management into development planning and production sector activities to safeguard biodiversity and maintain ecosystem services that sustain human wellbeing.”

33. UNDP is committed to stepping up efforts to integrate biodiversity and ecosystem objectives into multiple sectors across land- and seascapes including key productive sectors, such as fisheries, agriculture and forestry; promote more sustainable production practices that maintain land and water ecosystem services; and conserve remaining biodiversity. UNDP will support countries in stimulating job creation by helping “biodiversity-friendly” producers access new markets, and by promoting nature-based tourism initiatives that generate income for local communities. Sustainable harvesting livelihoods will be supported, as well as access and benefit sharing agreements on genetic resources. Work will be undertaken to integrate biodiversity objectives into production sectors such as fisheries, agriculture and forestry— promoting sustainable land management approaches to protect the

ecosystem services needed for food and water security. Incorporation of biodiversity and ecosystem issues in governments' development planning and poverty reduction strategies will aim to ensure that the real value of biodiversity and ecosystems is taken into account.

34. Activities under Signature Programme 1 (SP1) will aim to reduce pressures on ecosystems that affect ecosystem integrity and functioning by encouraging and assisting governments and businesses in integrating ecosystem management into development planning and production sector activities. Positioning biodiversity management as a positive balance sheet item can change the course of development and reduce the likelihood that ecosystems will be transformed and their biodiversity lost.

35. SP1 involves activities to influence the policy frameworks that govern production sectors such as agriculture, plantation forestry and fisheries, and to enhance institutional capacity for biodiversity management in these sectors. UNDP-managed projects will complement work by the Food and Agriculture Organization (FAO) on increasing production, and be linked to efforts to reduce forest degradation via REDD. This will include interventions to involve multiple stakeholders and sectors in strategic planning to reduce pressures on biodiversity, improve ecosystem management, facilitate sustainable use, and manage trade-offs. It will also include efforts to ensure that no species of wild fauna or flora is unsustainably exploited through international or national trade.

36. UNDP will also work with a range of producers—from small-scale farmers or fishers to representatives of large-scale commercial operations—to increase their capacity to determine sustainable off-take rates for resources, practice sustainable production, and establish and adapt ecosystem management strategies and mechanisms. The focus here will be on working with champions in each sector who have shown willingness to be engaged in conservation issues, and who could serve as role models for the production sector and stimulate replication of successful interventions.

37. Special emphasis will be placed on reducing land degradation and supporting sustainable land management. Human activities can degrade land and have a negative impact on water, soil and biological resources, affecting the lives and livelihoods of vulnerable communities, and restricting options to develop productive areas sustainably. Evidence of degradation can be seen when land resource potential is lost through desertification and deforestation. Using sustainable land management approaches, UNDP will work with governments and producers to reduce pressures on ecosystem integrity and functioning from competing land uses across production landscapes.

38. UNDP also promotes sustainable harvesting of non-timber forest products and other species, generating sustainable livelihoods and enhancing resilience. This includes artisanal production based on goods such as natural fibres and medicinal herbs. UNDP is working to promote benefit sharing with countries and communities that are providers of genetic resources and traditional knowledge, and has undertaken related work on diversity of indigenous crops.

39. Going forward, UNDP is committed to biodiversity and ecosystem mainstreaming work that:

- Promotes the holistic valuation of biodiversity and ecosystem services to strengthen the business case for investments by governments and the private sector.
- Internalizes the value of biodiversity and ecosystem services within national and sub-national plans, policies and accounting frameworks.
- Promotes engagement with sectors in production landscapes and seascapes to mainstream biodiversity and ecosystem management objectives.
- Works with countries to access traditional and innovative biodiversity financing and markets.
- Promotes sustainable use of biodiversity and facilitates agreements on Access and Benefit-Sharing (ABS) for genetic resources and traditional knowledge.
- Builds capacities in all aspects of the biodiversity-development interface.

40. UNDP's new Biodiversity and Ecosystems Global Framework 2012-2020 can be found at: <http://www.undp.org/content/dam/undp/library/Environment%20and%20Energy/biodiversity/UNDP-Biodiversity-and-Ecosystems-Global-Framework-2012-2020.pdf> 2. A UNDP publication on

Protecting Biodiversity in Production Landscapes can be downloaded at <http://web.undp.org/gef/document/UNOPS-ProtectingBiodiversityWEB.pdf>.

2.2 Sectorial matters

2.2.2 Animal genetic resources

Review of implementation of Interlaken Outcomes

CABI

41. CABI can provide data in support of implementation of the Interlaken outcomes regarding animal genetic resources Global Plan of Action strategic priorities 1) Characterization, inventory and monitoring of trends and associated risks; 2) Sustainable use and development; 3) Conservation; and 4) Policies, institutions and capacity building. CABI's information resources cover biodiversity; CAB Direct combines the leading bibliographic databases, CAB Abstracts and Global Health, holds ten million records; CABI's compendia provide in depth information about protecting crops, aquaculture and forestry.

IAEA

42. Animal Genetic Resources (AnGR) is one of the essential components that underlie world food security with its substantial contribution to the livelihood of rural people around the world. In 2007, the international community adopted the Global Plan of Action (GPA) on AnGR that comprised twenty-three strategic priorities under four major priority areas. International Atomic Energy Agency (IAEA), through its Joint FAO/IAEA Division of Nuclear Techniques in Food and Agriculture and Department of Technical Cooperation, is actively supporting the member states in all the four strategic priority areas through various coordinated research (CRPs) and technical cooperation project (TCPs) for effective implementation of GPA. One of the major thematic areas of the Animal Production and Health sub-program is "Innovative nuclear based approaches to maintain biodiversity and enhance livestock productivity" with major activities targeted towards evaluation, characterization, genetic improvement and sustainable utilization of diverse livestock breeds with special emphasis on developing member states as outlined in the Interlaken declaration. The details of the coordinated research projects (CRPs) targeting AnGR and implemented as part of the sub-program is as follows:

- i. The activities under the CRP "Gene based technologies in livestock breeding: Phase 1: Characterization of small ruminant genetic resources of Asia" focussed on strategic priority area 1 of GPA with inventory, characterization and monitoring of more than 70 indigenous breeds of sheep and goat in as many as seven Asian countries including Pakistan, Sri Lanka, Bangladesh, Indonesia, Vietnam, Iran and China.
- ii. The CRP on "Genetic variation on the control of resistance to infectious diseases in small ruminants" is being implemented in 12 developing countries across Asia, Africa and Latin America with the objective of characterizing indigenous sheep and goat breeds for their genetic potential against gastro-intestinal parasites. The project focusses on sustainable improvement of genetic disease resistance in indigenous small ruminants with innovative nuclear (like Radiation Hybrid Panel mapping of goat genome) and molecular (DNA markers for parasite resistance) based technologies thus targeting the implementation of strategic priority areas 1 and 2 of GPA.
- iii. As part of the sub-program activities, Animal Production and Health Laboratory has initiated the establishment of "Global Livestock DNA Bank" at Seibersdorf, Austria for preservation of DNA from indigenous livestock breeds across the world with the objective of ex situ conservation (Strategic Priority Area 3 of GPA) of whole genome as well as to promote international animal genetic research in indigenous livestock breeds.

43. Further, Technical Cooperation (TC) projects implemented by the Agency's Department of Technical Cooperation in association with Animal Production and Health sub-program are committed towards capacity building in member states (Strategic Priority Area 4 of GPA), especially through

financial support for establishment of genetic laboratories, technology transfer and training personnel on DNA technologies. Researchers and professionals from member states are provided group training as well as individual training through regional TC projects and National TC fellowships respectively. Further, TC projects provide support to the formulation of national breeding policy and breeding plans for improvement of indigenous livestock breeds. The details of Technical Cooperation Projects (TCPs) targeting AnGR and implemented by the Agency is as follows:

- i. National TC projects addressing the issues of characterization and improvement of indigenous livestock are being implemented in six countries across Asia and Africa including Angola, Burkina Faso, Cameroon, Madagascar, Myanmar and Zambia.
- ii. A Regional TC project with the objective of capacity building in Arab Asian countries including Iraq, Jordan, Yemen, Oman and Syria is being implemented to support genetic characterization of small ruminant genetic resources of the region.
- iii. A Regional TC project on “Supporting early warning and surveillance of Avian Influenza in wild and domestic birds and assessing genetic markers for bird resistance” was implemented in eastern European countries, the genetic component of which focussed on characterization and diversity analysis of indigenous chicken breeds of Europe and Asia with special emphasis on genes related to disease resistance.

44. The Agency is also receiving increased number of requests from member states for technical support on genetic characterization of AnGR with expressed interests varying on different domestic livestock species including camels, donkeys, alpacas, etc. With the availability of additional resources, it will be possible to meet the requirements of member states especially in terms of laboratory reagents and training personnel on advanced DNA methodologies for evaluation, characterization, conservation and sustainable utilization of AnGR.

IICA

45. The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency of the Inter-American System for the promotion of agriculture and rural well-being, and our efforts are fully focused on making agriculture competitive and sustainable in the Americas.

Animal Genetic Resources

46. IICA collaborated with the Peruvian Ministry of Agriculture on the administration of resources related to the acquisition and importation of dairy cattle breeds from the United States, as well as their adaptation and final distribution in Peru, from 2002 to 2004.

PRACTICAL ACTION

47. Paragraphs 19 to 29 are of relevance to the Commission’s work on animal genetic resources.

UNDP

48. Paragraphs 31 to 40 are of relevance to the Commission’s work on animal genetic resources.

2.2.3 Aquatic genetic resources

Review scoping policy analysis to identify gaps and opportunities related to aquatic genetic resources

CABI

49. CABI’s information resources cover biodiversity; CAB Direct combines the leading bibliographic databases, CAB Abstracts and Global Health, holds ten million records; CABI’s compendia provide in depth information about protecting crops, aquaculture and forestry.

PRACTICAL ACTION

50. Paragraphs 19 to 29 are of relevance to the Commission’s work on aquatic genetic resources.

UNDP

51. Paragraphs 31 to 40 are of relevance to the Commission's work in aquatic genetic resources.

2.2.4 Forest genetic resources

Presentation of The State of the World's Forest Genetic Resources

CABI

52. Paragraph 50. is of relevance to the Commission's work on forest genetic resources.

CBD

53. The CBD Secretariat contributed to the regional workshops to support the preparation of *The State of the World's Forest Genetic Resources* in Africa, 27-29 April, 2011, Nairobi, and in the Pacific, 19-21 January, 2011, Nadi, Fiji.

IICA

54. IICA provided technical assistance to Ecuador's Forestry Promotion and Development Unit in the implementation of a pilot project to establish Community Tree Nurseries (CTN) on the Santa Elena Peninsula for twelve months in 2009.

55. Beginning in 2011, IICA has been coordinating a 3-year project on Sustainable Forest Management in the Andean Region (Colombia, Ecuador, Peru and Bolivia) with funding from the Government of Finland. The project introduces and promotes the adoption of innovative approaches to eliminate bottlenecks that limit the development of the forestry sector, contribute to the sustainability of forest management and the expansion of forest plantations.

UNDP

56. Paragraphs 31 to 40 are of relevance to the Commission's work on forest genetic resources.

2.2.5 Micro-organisms and invertebrates

Review of key issues on micro-organisms and invertebrates

CABI

57. There are very few, if any coordinated *in-situ/ex-situ* programmes to manage the microbial and invertebrate communities that input into food production and food security. Little is known about the "hidden living resources" and their contribution so there is a lot of work to be done and we recommend that this is best done in partnerships. The Commission should not be looking to establish a new network for *ex-situ* conservation but should collaborate with MIRRI – Microbial Resources Research Infrastructure in this respect www.mirri.org. The Commission should also think more about how to address the as yet "unculturable" organisms. CABI and its international network of partners have had major input into the generation of international standards for the operation of biological resource centres and therefore can contribute to the Genebank Standards. CABI has relevant strengths and activities in the management of information, and the study and use of invertebrate and micro-organisms (particularly fungi and bacteria) for food and agriculture. Its collections include 28000 microbial strains and more than 250,000 microbial identification records. CABI has already partnered with CGRFA in studying and documenting the use of invertebrate genetic resources for biological control of pests. CABI is ready to cooperate with CGRFA as it develops its work programme in these areas.

UNDP

58. Paragraphs 31 to 40 are of relevance to the Commission's work on micro-organisms and invertebrates.

2.3 Cross-sectorial matters

2.3.1 Access and benefit-sharing for genetic resources for food and agriculture

Consideration of the need for and modalities of access and benefit-sharing arrangements for genetic resources for food and agriculture

CABI

59. CABI has contributed extensively to the international debate on modalities of access and benefit-sharing (ABS) arrangements for genetic resources. Here CABI supports the implementation of the Nagoya Protocol in a harmonised and mutually beneficial way. It is crucial that its implementation is not complicated by differing multi-sectoral approaches; there is a danger of creating an unmanageable administrative burden and, by so doing, impeding the exchange of genetic materials for research and legitimate use. Each country could implement the protocol in different ways to different extents and if they all approach the different sectors (Food, Agriculture, Bioindustry, Pharma, Ag-Biotech, Academia) individually it will be difficult to manage. The draft EU regulation on ABS tries to achieve European harmonised implementation of the Nagoya requirements and its content and scope seem highly appropriate. It is crucial that the implementation gives clarity and transparency and does not impede scientific discovery and product development. There is a need for more work on the models put forward and more clarity on how GRFA fits but this draft regulation offers a good way forward. The idea of ABS sector best practice codes and a system of Union trusted genetic resource collections provides scope for a mechanism for GRFA. The due diligence principle is excellent and the draft regulation is implementable at a useful level. All countries that ratify the Protocol enter into agreement that they will ensure as far as they can the implementation of each nation's requirements and monitor and report use. Simple practical approaches for the different sectors could be negotiated. CABI would like to work with the CGRFA to ensure appropriate procedures are put forward.

CBD

Cooperation with the CGRFA and implementation of the Multi-Year Programme of Work

60. The Joint Work Plan for the period 2011-2020 between the Secretariats of the CBD and the Food and Agriculture Organization of the United Nations and its CGRFA provides for collaboration between both Secretariats to promote and support the entry into force, development and implementation of the Nagoya Protocol and eventually, if desirable, the development of specialized instruments for the food and agriculture sector. The CBD Secretariat has closely followed developments under the CGRFA, in particular discussions at its thirteenth meeting and also participated as an observer in the Working Group on Access and Benefit-sharing, organised in Svalbard, Norway, on 11-13 September 2012. The report of this meeting was made available to CBD COP-11 in Hyderabad, India. In decision XI/6, paragraph 22, of CBD COP-11 Parties stressed the importance of further strengthening collaboration between the Convention and the Food and Agriculture Organization of the United Nations in meeting relevant Aichi Biodiversity Targets, particularly in the context of achieving food security and in respect of the Nagoya Protocol.

Cooperation with the International Treaty on Plant Genetic Resources for Food and Agriculture (IT-PGRFA)

61. Further to the MoU signed at CBD COP-10 between the Secretariats of the CBD and the IT-PGRFA to further enhance collaboration in areas of mutual interest within their mandates, the Secretariats launched a Joint Initiative of cooperation at the margins of the Rio+20 Earth Summit regarding activities in support of the ratification of the Nagoya Protocol and its harmonious implementation with the IT-PGRFA and its Multilateral System for Access and Benefit-sharing. The Joint Initiative foresees, inter alia, expanded joint capacity-building initiatives, continuation of preparation of joint materials on ABS for the harmonious implementation of instruments, continued

coordination and sharing of expertise on information management for ABS and facilitation of greater interaction between memberships. Three capacity-building workshops were co-organized with the IT-PGRFA and held back to back with meetings of the Convention on Biological Diversity, namely the first and second meeting of the Open-ended Ad Hoc Intergovernmental Committee for the Nagoya Protocol on ABS, held in June 2011 and July 2012 respectively, and the Seventh meeting of the Ad Hoc Open-ended Working Group on Article 8(j) and Related Provisions, in November 2011. These workshops each brought together over 100 participants.⁵ Following COP-11, further joint activities are to be planned to continue collaboration during the next biennium.

IFS

62. The ISF hopes that the 14th Regular Session will reinforce the need for complete coherence with the IT PGRFA on the topic of modalities of ABS systems. In particular, the ISF believes that the modalities of any access and benefit sharing regime would reflect certain principles, including:

- i. assure legal certainty using an agreement like a standard material transfer agreement to meet the conditions of Prior Informed Consent and Mutually Agreed Terms under the Convention on Biological Diversity and the Nagoya Protocol
- ii. be administratively simple and consistent such that smaller-scale breeders will not have to negotiate on a bilateral basis the large number of transfers needed in a breeding program and incur greater expense
- iii. include all PGRFA used in plant breeding in a manner that is consistent Article 3 of the IT PGRFA
- iv. recognize breeders' exception as benefit sharing
- v. be non-discriminatory and create no unreasonable burdens for private sector breeders, for-profit companies or breeders seeking to protect investments through the use of intellectual property rights
- vi. not create trade barriers by instituting inappropriate checkpoints as stated in Article 17(a)(iv) of the Nagoya Protocol that could create trade barriers and interfere with other legal/administrative/regulatory processes, such as intellectual property, product approvals, or customs clearance, and
- vii. assure conservation and future accessibility of the original genetic resources and/or its components.

IICA

63. In 2012, IICA provided support to the Fundación para la Innovación Agropecuaria (FIA) in Chile to carry out a comparative analysis of genebanks in Argentina, Brazil, Costa Rica, Mexico and New Zealand. The study compared the institutional structures, criteria for selection and prioritization of collecting and conservation activities, information access policies, germplasm access policies, and financing and business models.

64. In 2012, IICA provided expert advice to the Government of Costa Rica in support of their deliberations regarding the ratification of the Nagoya Protocol.

UNDP

65. Paragraphs 33, 38 and 39 are of relevance to the Commission's work on access and benefit-sharing for genetic resources for food and agriculture.

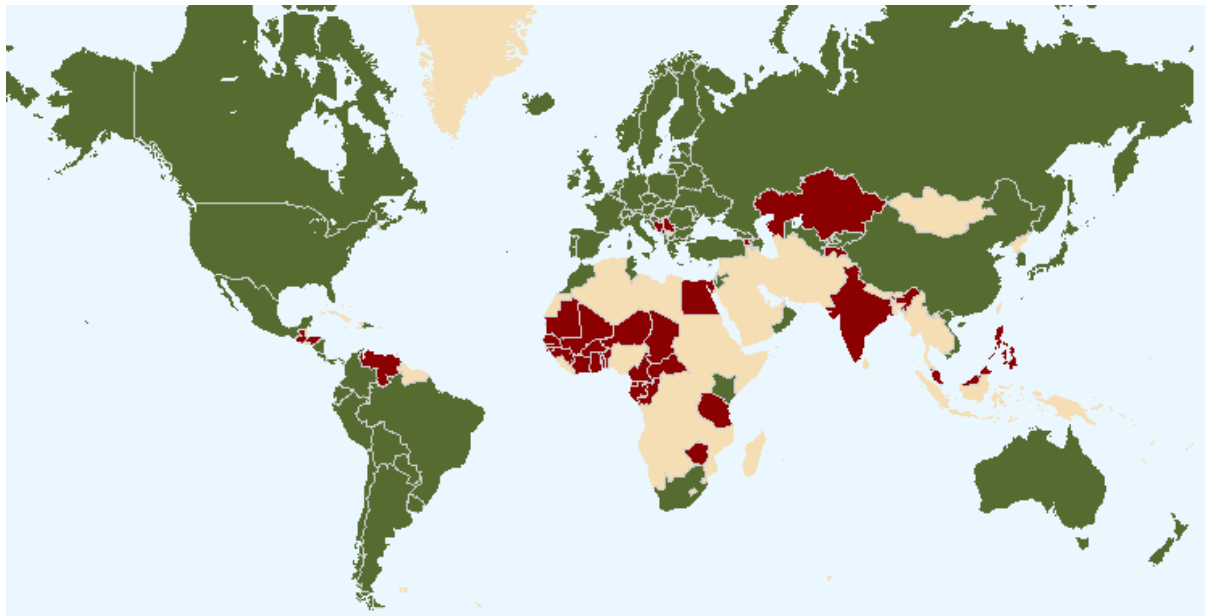
UPOV

Introduction

66. The International Union for the Protection of New Varieties of Plants (UPOV) was established in 1961 by the International Convention for the Protection of New Varieties of Plants (the "UPOV

⁵ The outcomes of the three workshops were made available as documents UNEP/CBD/ICNP/1/INF/6, UNEP/CBD/ICNP/2/INF/1, and UNEP/CBD/ICNP/2/INF/9.

Convention”). The mission of UPOV is to provide and promote an effective system of plant variety protection, with the aim of encouraging the development of new varieties of plants, for the benefit of society. The UPOV Convention and membership of UPOV provides an effective, internationally recognized system of plant variety protection (PVP). As of November 19, 2012, UPOV had 70 members (shown in green), and 17 States and one Organization which had initiated the procedure for becoming UPOV members (shown in brown).



The boundaries shown on this map do not imply the expression of any opinion whatsoever on the part of UPOV concerning the legal status of any country or territory

67. A further 21 States and two intergovernmental organizations have been in contact with the Office of the Union for assistance in the development of laws based on the UPOV Convention. Details are provided in the Appendix to this report.

68. The UPOV Convention provides the basis for UPOV members to encourage plant breeding by granting breeders of new plant varieties an intellectual property right: the breeder’s right. In order to obtain protection, the breeder needs to file individual applications with the authorities of UPOV members entrusted with the task of granting breeders’ rights⁶ (http://www.upov.int/members/en/pvp_offices.html).

69. In order to become a UPOV member the advice of the UPOV Council in respect of the conformity of the law of a future member with the provisions of the UPOV Convention is required. This procedure leads, in itself, to a high degree of harmony in those laws, thus facilitating cooperation between members in the implementation of the system. Guidance documents on how to develop legislation and become a UPOV member can be found at http://www.upov.int/upov_collection/en/. The legislation of UPOV members can be consulted in UPOV Lex at <http://www.upov.int/upovlex/en/>.

70. The effectiveness of the UPOV system is enhanced by the provision of guidance and information materials such as Explanatory Notes (“UPOV/EXN” series), Information Documents (“UPOV/INF” series), the General Introduction to the Examination of Distinctness, Uniformity and Stability and the Development of Harmonized Descriptions of New Varieties of Plants, with its associated TGP documents, and the “Guidelines for the Conduct of Tests for Distinctness, Uniformity and Stability” (see Test Guidelines at http://www.upov.int/test_guidelines/en/). Such materials provide the basis for harmonization and, thereby, facilitate cooperation between UPOV members (see UPOV Collection at http://www.upov.int/upov_collection/en/).

⁶ The different Acts of the UPOV Convention can be consulted at <http://www.upov.int/upovlex/en/acts.html>.

71. Further measures to support and enhance cooperation between members relate to information on plant varieties, available in the PLUTO Plant Variety Database (see <http://www.upov.int/pluto/en/>), and information related to plant genera and species, available in the GENIE database (see <http://www.upov.int/genie/en/>).

72. For training on the UPOV Convention see <http://www.upov.int/resource/en/training.html>

UPOV AND PLANT GENETIC RESOURCES

Access to Genetic Resources

73. “UPOV considers that plant breeding is a fundamental aspect of the sustainable use and development of genetic resources. It is of the opinion that access to genetic resources is a key requirement for sustainable and substantial progress in plant breeding. The concept of the ‘breeder’s exemption’ in the UPOV Convention, whereby acts done for the purpose of breeding other varieties are not subject to any restriction, reflects the view of UPOV that the worldwide community of breeders needs access to all forms of breeding material to sustain greatest progress in plant breeding and, thereby, to maximize the use of genetic resources for the benefit of society.”⁷

Benefit-Sharing

74. “[...] [T]he ‘breeder’s exemption’, established in the UPOV Convention, [means that] acts done for the purpose of breeding other varieties are not, under the UPOV Convention, subject to any restriction and the breeders of protected varieties (initial varieties) are not entitled to financial benefit-sharing with breeders of varieties developed from the initial varieties, except in the case of essentially derived varieties (EDV).”⁵

75. “The Food and Agriculture Organization of the United Nations (FAO), at its 31st Conference, on November 3, 2001, adopted the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA), [which] recognizes the concept of the breeder’s exemption, in that breeders are exempted from mandatory financial benefit-sharing whenever their products are ‘available without restriction to others for further research and breeding ...’”⁵ (see ITPGRFA, Article 13.2. (d)(ii)).

76. “In addition to the breeder’s exemption and the research exemption, the [1991 Act of the] UPOV Convention contains a compulsory exception to the breeder’s right whereby the breeder’s right does not extend to acts done privately and for non-commercial purposes. Therefore, activities of subsistence farmers, where these constitute acts done privately and for non-commercial purposes, are excluded from the scope of the breeder’s right and such farmers freely benefit from the availability of protected new varieties.”

77. “The inclusion of the optional exception in the 1991 Act of the UPOV Convention recognizes that, for some crops, there has been a common practice of farmers saving the product of the harvest for propagating purposes, and this provision allows each member of the Union to take account of this practice and the issues involved on a crop-by-crop basis, when providing plant variety protection. The use of the words ‘within reasonable limits and subject to the safeguarding of the legitimate interests of the breeder’ is consistent with an approach whereby, if the optional exception is implemented, it is done in a way which does not undermine the incentives provided by the UPOV Convention for breeders to develop new varieties.”⁸

2.3.2 Climate change and genetic resources for food and agriculture

Consideration of finalized roadmap or work programme on climate change and genetic resources for food and agriculture

CABI

78. CABI believes that climate change will be the backdrop against which extra food needs to be produced, and is likely to exacerbate water shortages, reduce crop yields and create new pest and

⁷ See http://www.upov.int/export/sites/upov/news/en/2003/pdf/cbd_response_oct232003.pdf

⁸ See document UPOV/EXN/EXC/1, paragraph 25, at http://www.upov.int/edocs/expndocs/en/upov_exn_exc_1.pdf

disease threats. CABI's pivotal project in the area is Plantwise which is establishing a global plant health system; its activities include the building of a knowledge bank. This unique data resource should be utilised by the CGRFA in its work.

IAEA

79. Paragraphs 7 to 13 and paragraphs 15 and 16 are of relevance to the Commission's work on climate change and genetic resources for food and agriculture.

IICA

80. IICA recognizes the inseparable relationship that exists between biodiversity and agricultural production and the importance of conserving and responsibly managing the world's biodiversity to ensure the sustainability and resilience of agricultural systems and global food security. As indicated in its Mid-Term Plan 2010-2014, Strategic Objective 3, IICA strives to improve agriculture's capacity to mitigate and adapt to climate change and make better, more responsible use of natural resources, including agro-biodiversity.

81. Through its Program of Cross-Cutting Coordination on Agriculture, Natural Resources Management and Climate Change, IICA promotes the increased use of agricultural biodiversity for the diversification of production systems as a key component of its activities, good practices, and policy recommendations aimed at strengthening the sustainability and resilience of agroecosystems, particularly in terms of adapting to climate change and responding to natural disasters.

82. IICA serves as a member of the Technical Advisory Committee of the Project "Scientific and participatory formulation of a Strategic Action Plan (SAP) to Strengthen the Conservation and Use of Plant Genetic Resources in Mesoamerica, as an alternative for Adaptation to Climate Change", and participated in its first Regional Consultation Meeting in Guatemala City from 6 – 9 November 2012. Bioversity International is implementing this project with financial support from the Benefit Sharing Fund of the International Treaty on Plant Genetic Resources for Food and Agriculture.

83. Beginning in 2010, IICA has been coordinating a 4-year project to enhance the adaptation of maize and beans to climate change in Central America and the Dominican Republic, with funding from the Inter-American Development Bank.

IIED

84. Nowadays IIED is realizing a project on "Smallholder Innovation for Resilience: Strengthening Innovation Systems for Food Security in the face of Climate Change".

2.3.3 International targets and indicators for biodiversity for food and agriculture

Review of all relevant international targets and indicators for biodiversity for food and agriculture

CABI

85. CABI has the both data and resources to help review relevant international targets and indicators for biodiversity, address key issues on biodiversity and nutrition and therefore contribute to the work programme of the CGRFA.

CBD

86. Regarding the Indicator framework for the Strategic Plan for Biodiversity 2011–2020 and the Aichi Biodiversity Targets, decision XI/3 of CBD COP-11, inter alia, invited the FAO to contribute to assessing progress towards achievement of selected Aichi Biodiversity Targets and in particular, in the current context, regarding Aichi Biodiversity Target 13. The progress with consideration of targets and indicators by the sixth session of the Intergovernmental Technical Working Group on Plant

Genetic Resources for Food and Agriculture (ITWG-PGRFA), 14-16 November 2012, Rome, has been noted by the CBD Secretariat and is a useful contribution to the monitoring and indicators work.

UNDP

87. Paragraph 31 is of relevance to the Commission's work on climate change and genetic resources for food and agriculture.

2.3.4 Biodiversity and nutrition

Review of key issues on biodiversity and nutrition

CABI

88. Paragraph 85. is of relevance to the Commission's work on biodiversity and nutrition.

IAEA

89. Paragraph 14. is of relevance to the Commission's work on biodiversity and nutrition.

ISF

90. Paragraph 18. is of relevance to the Commission's work on biodiversity and nutrition.

PRACTICAL ACTION

91. Paragraph 26 and 27 are of relevance to the Commission's work on biodiversity and nutrition.

III. SUBMISSIONS RELEVANT TO OTHER AREAS OF THE COMMISSION'S MULTI-YEAR PROGRAMME OF WORK

CBD

92. The CBD Secretariat attended the workshop "Towards the Establishment of a Global Network for *In-Situ* Conservation and On-Farm Management of Plant Genetic Resources for Food and Agriculture", 13 November, 2012, Rome, and the sixth session of the ITWG-PGRFA.

93. Paragraph 61 is also of relevance to this section. 94. Finally, the CBD Secretariat attended the first meeting of the Ad-Hoc Technical Committee on Sustainable Use of Plant Genetic Resources for food and Agriculture, held in Rome, on 8-9 November 2012.

IICA

95. From 2007 to 2009, IICA coordinated the implementation of a regional cooperation project on wheat genetic resources in the Southern Cone countries of South America. The project's objective was to develop characteristics in the wheat crop to make it commercially competitive, preferably under no-till direct-seeding systems, and to increase the sustainability of the dominant farming systems in the region. The project improved the standards for grain quality and improved the characterization and conservation of regional germplasm accessions. The participating institutions were INTA (Argentina), EMBRAPA (Brazil), INIA (Chile), DIA (Paraguay), INIA (Uruguay), CIMMYT (Mexico), INIA (Spain), ANAPO (Bolivia) and the member countries of PROCISUR.

IIED

96. IIED is an independent international research organisation, IIED specialises in linking local to global. In Africa, Asia, Central and South America, the Middle East and the Pacific, IIED works with some of the world's most vulnerable people to ensure they have a say in the policy arenas that most closely affect them.

97. IIED's cooperation with the Governing body of the International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA) led to the official recognition of our work with partners in Peru where agricultural landscapes rich in crop diversity are managed by indigenous communities using local knowledge, institutions and practices (e.g. The Potato Park in Cusco province as a model for the ITPGRFA).

98. The Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture in its last session stressed the importance of the participation of stakeholders - as representatives of farmers' organization and NGOs - in the updating of *The State of the World's Plant Genetic Resources for Food and Agriculture*. Indeed this updating has great relevance for the purpose of the IIED and particularly for this project.

99. Thus we are interested in participating in this process and we would like receive some information regarding the opportunities to engage in (e.g.: timeline, form for submission of papers and ways to participate in consultations).

PRACTICAL ACTION

100. Paragraphs 19 to 29 are of relevance to the Commission's work on plant genetic resources.

UNDP

101. Paragraphs 31 to 40 are of relevance to the Commission's work on plant genetic resources.

UPOV

UPOV INFORMATION AND ACTIVITIES

Website resources

102. The redesigned UPOV website, which was launched on November 1, 2011, includes the following features:

- freely accessible PLUTO database of plant varieties (see <http://www.upov.int/pluto/en/>);
- multimedia presentation on UPOV (see <http://www.upov.int/overview/en/>);
- video on the use of plant variety protection by gentian farmers in the Ashiro region of Japan ("the Ashiro Rindo story") (see http://www.upov.int/multimedia/en/2011/ashiro_rindo.html);
- UPOV Collection of materials explaining the UPOV system (see http://www.upov.int/upov_collection/en/);
- UPOV Lex database of UPOV members' laws (<http://www.upov.int/upovlex/en/>);
- free access to documents of the Administrative and Legal Committee (CAJ), Technical Committee (TC) and Technical Working Parties (TWPs) (<http://www.upov.int/meetings/en/topic.jsp>); and
- UPOV Guidelines for the Conduct of Tests for Distinctness, Uniformity and Stability (Test Guidelines) in Word format (see http://www.upov.int/test_guidelines/en/).

Seminars and Symposia

103. UPOV has recently organized the following events in Geneva, the presentations for which can be found on the UPOV website (see http://www.upov.int/meetings/en/topic.jsp?group_id=73):

- Symposium on the Benefits of Plant Variety Protection for Farmers and Growers (held in Geneva on November 2, 2012)
- Symposium on Plant Breeding for the Future (held in Geneva on October 21, 2011)
- Seminar on Plant Variety Protection and Technology Transfer: the Benefits of Public-Private Partnership (held in Geneva on April 11 and 12, 2011)

Cooperation with the Food and Agriculture Organization of the United Nations (FAO)

104. Commission on Genetic Resources for Food and Agriculture (CGRFA)

The Office of the Union attended the Thirteenth Regular Session of the Commission on Genetic Resources for Food and Agriculture (CGRFA-13), held in Rome, from July 18 to 22, 2011, and the

Sixth Session of the Intergovernmental Technical Working Group on Plant Genetic Resources for Food and Agriculture of the CGRFA, held in Rome from November 14 to 16, 2012.

105. International Treaty on Plant Genetic Resources for Food and Agriculture (ITPGRFA)

– Research project on the economics of the Multilateral System of the ITPGRFA

The Council of UPOV, at its forty-fifth ordinary session, held in Geneva on October 20, 2011, agreed with the request of the Secretariat of the ITPGRFA for the Office of the Union to cooperate with ITPGRFA on a research project on the economics of the Multilateral System of the ITPGRFA, based on information available from the Plant Variety Database (PLUTO)

– Platform for the Co-Development and Transfer of Technologies

At the invitation of the Secretary of the ITPGRFA, the Office of the Union attended a meeting on August 7 and 8, 2012, in Brasilia, to discuss the options for the establishment and intended activities of a “Platform for the Co-Development and Transfer of Technologies” within the context of the ITPGRFA.

106. For further information about UPOV, please contact the Office of the Union:

E-mail: upov.mail@upov.int Website: www.upov.int

Tel: (+41-22) 338 9153 Fax: (+41-22) 733 0336

[Appendix follows]

APPENDIX

STATUS IN RELATION TO THE INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS (UPOV) *as of November 19, 2012*

I. Members of UPOV

Albania ³	Costa Rica ³	Israel ³	Panama ^{3,5}	Switzerland ³
Argentina ²	Croatia ³	Italy ²	Paraguay ²	The former Yugoslav
Australia ³	Czech Republic ³	Japan ³	Peru ³	Republic of Macedonia ³
Austria ³	Denmark ³	Jordan ³	Poland ³	Trinidad and Tobago ²
Azerbaijan ³	Dominican Republic ³	Kenya ²	Portugal ²	Tunisia ³
Belarus ³	Ecuador ²	Kyrgyzstan ³	Republic of Korea ³	Turkey ³
Belgium ¹	Estonia ³	Latvia ³	Republic of Moldova ³	Ukraine ³
Bolivia	European Union ^{3,4}	Lithuania ³	Romania ³	United Kingdom ³
(Plurinational State of) ²	Finland ³	Mexico ²	Russian Federation ³	United States of America ³
Brazil ²	France ³	Morocco ³	Singapore ³	Uruguay ²
Bulgaria ³	Georgia ³	Netherlands ³	Slovakia ³	Uzbekistan ³
Canada ²	Germany ³	New Zealand ²	Slovenia ³	Viet Nam ³
Chile ²	Hungary ³	Nicaragua ²	South Africa ²	(Total 70)
China ²	Iceland ³	Norway ²	Spain ³	
Colombia ²	Ireland ³	Oman ³	Sweden ³	

¹ 1961 Convention as amended by the Additional Act of 1972 is the latest Act by which one State is bound.

² 1978 Act is the latest Act by which 19 States are bound.

³ 1991 Act is the latest Act by which 49 States and one organization are bound.

⁴ Operates a (supranational) Community plant variety rights system which covers the territory of its 27 members.

⁵ Panama will become bound by the 1991 Act of the UPOV Convention on November 22, 2012.

II. States and intergovernmental organizations which have initiated the procedure for acceding to the UPOV Convention

States (17):

Armenia, Bosnia and Herzegovina, Egypt, Ghana, Guatemala, Honduras, India, Kazakhstan, Malaysia, Mauritius, Montenegro, Philippines, Serbia, Tajikistan, United Republic of Tanzania, Venezuela (Bolivarian Republic of) and Zimbabwe.

Organization (1):

African Intellectual Property Organization (OAPI)

(member States of OAPI (16): Benin, Burkina Faso, Cameroon, Central African Republic, Chad, Congo, Côte d'Ivoire, Equatorial Guinea, Gabon, Guinea, Guinea-Bissau, Mali, Mauritania, Niger, Senegal, Togo).

**III. States and intergovernmental organizations which have been in contact with the Office of the Union
for assistance in the development of laws based on the UPOV Convention**

States (21):

Algeria, Bahrain, Barbados, Brunei Darussalam, Cambodia, Cuba, Cyprus, El Salvador, Indonesia, Iraq, Islamic Republic of Iran, Lao People's Democratic Republic, Libya, Mozambique, Pakistan, Saudi Arabia, Sudan, Thailand, Tonga, Turkmenistan and Zambia.

Organizations (2):

African Regional Intellectual Property Organization (ARIPO)

(member States of ARIPO (18): Botswana, Gambia, Ghana, Kenya, Lesotho, Liberia, Malawi, Mozambique, Namibia, Rwanda, Sierra Leone, Somalia, Sudan, Swaziland, Uganda, United Republic of Tanzania, Zambia, Zimbabwe)

Southern African Development Community (SADC)

(member States of SADC (15): Angola, Botswana, Democratic Republic of the Congo, Lesotho, Madagascar, Malawi, Mauritius, Mozambique, Namibia, Seychelles, South Africa, Swaziland, United Republic of Tanzania, Zambia, Zimbabwe).