UNEP

CBD

Convention on Biological Diversity

Distr.
GENERAL

UNEP/CBD/SBSTTA/13/2
26 November 2007

ORIGINAL: ENGLISH

SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE
Thirteenth meeting
FAO, Rome, 18–22 February 2008
Item 3.1 of the provisional agenda*

IN-DEPTH REVIEW OF THE IMPLEMENTATION OF THE PROGRAMME OF WORK ON AGRICULTURAL BIODIVERSITY

Note by the Executive Secretary

EXECUTIVE SUMMARY

In accordance with the multi-year programme of work of the Conference of the Parties up to 2010 (decision VII/31, annex), the in-depth review of the implementation of the programme of work on agricultural biodiversity is scheduled to take place at the ninth meeting of the Conference of the Parties. This note has been prepared by the Executive Secretary in partnership with the Food and Agriculture Organization of the United Nations (FAO) and in consultation with other relevant international organizations. It summarizes the findings of the in-depth review of the implementation of the programme of work on agricultural biodiversity, including its four programme elements and the three international initiatives. In summary, the main findings of the review are:

(a) Information from the third national reports and from international organizations indicates that the programme of work on agricultural biodiversity is a relevant framework to achieve the objectives of the Convention on Biological Diversity;

(b) The programme of work also provides a useful framework to address emerging biodiversity-related issues including climate change and biofuels;

(c) The findings suggest that the three international initiatives (on pollinators, soil biodiversity, and food and nutrition), adopted within the programme of work, are particularly effective, and their creation has garnered momentum for key international players to implement activities aimed at achieving the objectives of these initiatives; consequently, such initiatives should be pursued;

(d) Parties are implementing the programme of work on agricultural biodiversity to various degrees, with the contribution and the support of relevant international organizations. Significant progress has been made on the assessment of agricultural biodiversity, in particular by the Food and Agriculture Organization of the United Nations (FAO) with the publications of the states of the world's animal and plant genetic resources, and assessments of other important components of agricultural biodiversity. Many activities have also been undertaken to strengthen capacity and raise awareness of the

* UNEP/CBD/SBSTTA/13/1.

/…

importance of agricultural biodiversity. However, more work still needs to be done, in particular to strengthen both the application of the ecosystem approach, and the cooperation and synergy between agriculture and environment sectors at the national level. Further strengthening the use of the ecosystem approach in the context of the programme of work on agricultural biodiversity should contribute to the sustainable production of food, and a balanced provision of ecosystem services including food, feed and fibre in providing a source of alternative energy and environmental services such as watershed, climate and soil regulation;

(e) Despite many efforts made through the implementation of the programme of work, agriculture continues to threaten biodiversity, including through the conversion of natural habitats into agricultural areas, the focus on a limited number of ecosystem services, particularly the production of food, feed and fibre, at the expense of others, and through agricultural practices that impact negatively the surrounding environment (mainly water and soil). This highlights the importance to strengthen the application of the ecosystem approach to agriculture, and to consider the impacts of agriculture on biodiversity beyond agricultural ecosystems.

SUGGESTED RECOMMENDATIONS

1. The Subsidiary Body on Scientific, Technical and Technological Advice may wish to *welcome* the preparations for the 2008 International Biodiversity Day and *emphasize* the importance of the Day for enhancing awareness of the value of agricultural biodiversity, its current rate of loss and the need to support and implement actions that will halt its loss for the benefit of food security, human nutrition and improved rural livelihoods.

2. The Subsidiary Body on Scientific, Technical and Technological Advice may also wish to recommend that the Conference of the Parties adopt a decision along the following lines:

The Conference of the Parties

Status and trends of agricultural biodiversity

(a) *Welcomes* the progress and plans made by FAO in preparing the State of the World's Biodiversity for Food and Agriculture, including in particular the State of the World's Animal Genetic Resources, the State of the World's Plant Genetic Resources, the State of the World's Aquatic Genetic Resources, the rapid assessment of pollinators' status, and other reviews on the status and trends on micro-organisms and invertebrates, and *encourages* FAO to finalize them as planned;

(b) *Welcomes* in particular the publication by the Food and Agriculture Organization of the United Nations of the *State of the World's Animal Genetic Resources for Food and Agriculture* in 2007 and *encourages* FAO to distribute the report widely, to continue to lead the global updating of the status and trends of animal genetic resources, and to support developing countries in this process;

Implementation of activities in the programme of work: assessment

(c) *Requests* the Executive Secretary to collaborate with FAO and other relevant organizations to identify or develop indicators and methods to objectively evaluate how the implementation of the programme of work on agricultural biodiversity contributes to the implementation of the objectives and the Strategic Plan of the Convention, consistent with the framework adopted by the Conference of the Parties in decision VII/30 and VIII/15, building on ongoing initiatives, and to identify measurable goals and targets that may be integrated into the updated Strategic Plan of the Convention;

(d) *Requests* the Executive Secretary, in collaboration with relevant partners, to analyse the implications of the findings of the International Assessment of Agricultural Science and Technology for Development (IAASTD) on the work of the Convention;

(e) *Invites* FAO, in collaboration with other relevant partners, to compile information on the impacts of agricultural practices and other drivers of biodiversity changes on components of agricultural biodiversity, and the impacts of agriculture on other ecosystem services;

Implementation of activities in the programme of work: adaptive management and capacity-building

(f) *Requests* the Executive Secretary in collaboration with FAO and other relevant organizations to promote and provide support to Parties, in particular developing country Parties, in implementing the programme of work and the application of the ecosystem approach to agriculture;

Implementation of activities in the programme of work: mainstreaming

(g) *Notes* that agriculture is a major driver of biodiversity loss and the need to reduce the footprint of agriculture on biodiversity; and *also notes* that agriculture requires biological diversity and its associated ecosystem functions in order to deliver sustained food security and environmental services;

(h) *Welcomes* the Comprehensive Assessment of Water Management in Agriculture as a significant contribution towards managing the impacts of agriculture on water, *invites* Parties, other Governments and relevant international organizations to take note of its outcomes, and *urges* increased attention to the linkages between biodiversity, agriculture, water and climate change;

(i) *Invites* Parties, other Governments, relevant international organizations, local and indigenous communities, farmers, pastoralists and animal breeders, and all those whose livelihoods depend on the sustainable use, development and conservation of agricultural biodiversity, to apply the ecosystem approach more effectively, bearing in mind the further decisions of the Conference of the Parties on the ecosystem approach at its ninth meeting;

(j) *Invites* FAO and other relevant organizations to further work on assessing the status and trends of agro-ecosystems and the impacts of agriculture on the broader environment, and to develop response options to reduce the ecological footprint of agriculture, taking into account ongoing initiatives;

(k) *Invites* Parties, other Governments, indigenous and local communities and relevant organizations to promote improved implementation of the programme of work through:

(i) Improved collaboration between all relevant actors at all levels in Government including at the local level, and involving the private sector, as appropriate, in order to mainstream awareness of the impacts of agriculture on biodiversity and appropriate responses to promote the conservation and sustainable use of all biodiversity impacted by agriculture using the ecosystem approach; and

(ii) Integrating it into national biodiversity strategies and action plans and linking it to the implementation of the other programmes of work of the Convention.

(l) *Urges* Parties, other Governments and relevant organizations to strengthen dialogue with farmers, including through the International Federation of Agricultural Producers (IFAP), Via Campesina and other farmers representative bodies, in the implementation and development of the programme of work;

International Initiative for the Conservation and Sustainable Use of Pollinators

(m) *Invites* FAO in collaboration with relevant organizations to continue the implementation of the International Initiative for the Conservation and Sustainable Use of Pollinators particularly in relation to assembling information on pollinator populations and studying their ecology and to determine to what degree pollinators are experiencing significant declines, identify the causes of such declines, and assess the consequences of pollinator declines in terms of agricultural production and socio-economic consequences, and prepare a report for the consideration by SBSTTA at a meeting, prior to the tenth meeting of the Conference of the Parties, and *requests* the Subsidiary Body to develop recommendations on how to prevent or slow down the decline of pollinators and/or how to restore their populations;

(n) *Invites* FAO and *requests* the Executive Secretary to continue supporting Parties, other Governments and other stakeholders in their implementation of the International Pollinators Initiative, including through capacity development and dissemination of information on pollinators' status, good practices and lessons learnt;

With regard to the International Initiative for the Conservation and Sustainable Use of Soil Biodiversity

(o) *Invites* FAO, the Tropical Soil Biology and Fertility (TSBF) Programme, the Research and Development Institute (IRD), the International Centre for Agriculture and Biosciences (CABI), and other relevant organizations to carry out further work and compile information to improve the understanding of the linkages between biodiversity and agricultural soils, and to facilitate the integration of soil biodiversity issues into agricultural policies;

(p) *Invites* FAO and *requests* the Executive Secretary to continue supporting Parties, other Governments and other stakeholders in their implementation of the International Initiative for the Conservation and Sustainable Use of Soil biodiversity, including through capacity-building and dissemination of good practices and lessons learned;

International Initiative on Biodiversity for Food and Nutrition

(q) *Invites* FAO, the World Health Organization, Bioversity International and the Executive Secretary to support Parties, other Governments and other stakeholders in their implementation of the initiative, including through capacity development and dissemination of good practices and lessons learnt;

3. The Subsidiary Body on Scientific, Technical and Technological Advice may also wish to recommend that the Conference of the Parties:

Agricultural biodiversity, climate change and biofuels 1/

(a) *Encourages* Parties to document observed impacts, consider the projected impacts of climate change on agricultural biodiversity, and use the information in cross-sector planning in agricultural areas;

(b) *Requests* the Executive Secretary and *invites* FAO and other relevant organizations, to provide countries with data, tools and information for adapting their agricultural policies and practices to changing climate regimes and to improve farmers' and pastoralists' capacities to reduce the risk

1/ With regard to the linkage between agrobiodiversity and biofuels, reference can also be made to SBSTTA recommendation XII/7.

associated with climate variability, and *welcomes* the organization by FAO of a high-level meeting to be held in June 2008 on "World Food Security and the Challenges of Climate Change and Bioenergy";

(c) *Further requests* the Executive Secretary to work with FAO, the Joint Liaison Group, the organizations involved in follow up to the Millennium Ecosystem Assessment and other partners in:

(i) Gathering and disseminating information on the links between climate change, agriculture and biodiversity, including, in particular, the impacts of climate change on crops, livestock, food and nutrition, soil biodiversity and pollinators, and on ways and means to build resilience into food and agricultural livelihood systems as part of strategies for climate variability and change mitigation and adaptation, especially in communities of developing countries that are dependent on rain-fed agriculture for local food supplies;

(ii) Assisting Parties, indigenous and local communities and stakeholders in integrating lessons learned from the conservation and sustainable use of agricultural biodiversity into climate change adaptation and mitigation planning and cross-sectoral planning in agricultural areas.

Addis Ababa Principles and Guidelines on Sustainable Use

(d) *Requests* the Executive Secretary to collaborate with FAO and other relevant organizations to operationalize the Addis Ababa Principles and Guidelines for the sustainable use of agricultural biodiversity, in particular by harmonizing food-security and economic-development goals with long-term sustainability and adaptation to environmental and socio-economic changes, including demographic, climatic and other global changes, building on good practices from current experiences and lessons learnt, including through capacity-building and dissemination of case-studies.

(e) *Invites* Parties, other Governments and relevant organizations, including the business sector, bearing in mind decision VIII/17, to integrate into their policies the Addis Ababa Principles and Guidelines;

General

(f) *Alarmed* by world's food insecurity and *convinced* that agricultural biodiversity is a vital asset to achieve Millennium Development Goals 1 and 7, *reiterates* its recognition, in decision V/5, of the special nature of agricultural biodiversity, its distinctive features, and problems needing distinctive solutions and *calls upon* Parties, other Governments and international organizations to strengthen international cooperation in the conservation and sustainable use of agricultural biodiversity, and the fair and equitable sharing of benefits arising out of its use, for food security and sustainable agriculture;

(g) *Welcomes* the FAO Global Plan of Action for Animal Genetic Resources adopted by the first International Technical Conference on Animal Genetic Resources held in Interlaken, Switzerland, in September 2007, as an internationally agreed framework that contains the strategic priorities for the sustainable use, development and conservation of animal genetic resources for food and agriculture, and provisions for implementation and financing, and *invites* Parties, other Governments, indigenous and local communities, farmers, pastoralists, animal breeders, relevant organizations and other stakeholders to ensure the effective implementation of the Global Plan of Action, bearing in mind the need for sustained political will and mobilization of resources to enhance technical capacities in developing countries and reinforce national programmes;

(h) *Welcomes* the progress in implementing the International Treaty on Plant Genetic Resources for Food and Agriculture and the adoption of the Multi-Year Programme of Work of the FAO's intergovernmental Commission on Genetic Resources for Food and Agriculture, whose implementation would also contribute to the implementation of the Convention programme of work on agricultural biodiversity;

(i) *Requests* the Executive Secretary to work with FAO to prepare a joint work plan on biodiversity for food and agriculture between the Convention on Biological Diversity and FAO and its Commission on Genetic Resources for Food and Agriculture that would assist countries in, *inter alia,* streamlining reporting requirements, and facilitating the dialogue at international and country level between environment and agriculture, while respecting each other mandates and intergovernmental authority;

(j) *Encourages* the Platform for Agricultural Biodiversity Research to identify areas of future research in agricultural biodiversity that will contribute to enhancing resilience of agricultural systems;

(k) *Adopts* the following mission and vision for the programme of work:

(i) ***Vision***: The long-term vision of the programme of work on agricultural biological diversity is the conservation, sustainable use, and fair and equitable sharing of benefits arising from the use of agricultural biological diversity, in order to effectively halt the human-induced loss of agricultural biological diversity and ensure its capacity to continue to support goods and services for the benefit of human well-being.

(ii) ***Mission*****:** The mission of the programme of work on agricultural biodiversity is to increase the capacity of agricultural ecosystems to provide food security and support other ecosystem services and to minimize negative impacts on others ecosystems, both in the present and for future generations by promoting the conservation and sustainable use of biological diversity, while promoting the implementation of the three objectives of the Convention, consistent with the Strategic Plan of the Convention and thereby achieving a significant reduction of the current rate of agricultural biological diversity loss at the global, regional, national and local level as a contribution to poverty alleviation and to the benefit of life on Earth.

I. INTRODUCTION

1. At its fifth meeting of the Conference of the Parties endorsed the programme of work on agricultural biodiversity in 2000 (decision V/5, annex 5) as a contribution to the implementation of decision III/11 on the conservation and sustainable use of agricultural biodiversity. In the same decision, Parties requested the Executive Secretary to invite FAO to support the development and the implementation of this programme of work. Its objectives are to promote the positive effects and mitigate the negative impacts of agricultural practices on biological diversity, the conservation and sustainable use of genetic resources, and the fair and equitable sharing of benefits arising out the use of genetic resources.

2. In addition, the Conference of the Parties has decided to establish three international initiatives: (i) for the conservation and sustainable use of pollinators (decision V/5, section II) and its action plan (decision VI/5, annex II); (ii) for the conservation and sustainable use of soil biodiversity (decision VI/5, paragraph 13) and its framework for action (decision VIII/23 B); and (iii) on biodiversity for food and nutrition (decision VII/32, paragraph 7, and decision VIII/23 A, annex).

3. In the annex to decision VII/31 and in decision VIII/23 D, the Conference of the Parties requested the Executive Secretary, in partnership with FAO and in consultation with other relevant international organizations, to prepare the in-depth review of the implementation of the programme of work on agricultural biodiversity for consideration at its ninth meeting, by taking into account the guidelines for the review of the programmes of work of the Convention (decision VIII/15, annex III).

4. This note is mainly based on the information contained in the synthesis of information from the third national reports on the implementation of the programme of work on agricultural biodiversity (UNEP/CBD/SBSTTA/13/INF/1), in an information document prepared by FAO on the International Organizations' Contribution to the implementation of the programme of work on agricultural biodiversity (UNEP/CBD/SBSTTA/13/INF/2), and in the Millennium Ecosystem Assessment (MA).

II. STATUS AND TRENDS OF, AND THREATS TO, AGRICULTURAL BIODIVERSITY

5. Agricultural biodiversity is a broad term that includes all components of biological diversity of relevance to food and agriculture, and those that constitute the agro-ecosystem: the variety and variability of animals, plants and micro-organisms, at the genetic, species and ecosystem levels, which are necessary to sustain key functions of the agro-ecosystem, its structure and processes.

6. A number of completed, ongoing or planned assessments overseen by the FAO Commission on Genetic Resources for Food and Agriculture (CGRFA) are a valuable contribution to the preparation of the State of the World's Biodiversity for Food and Agriculture. The State of the World's Animal Genetic Resources, 2/ released by FAO in June 2007, drawing on the analysis of 169 country reports submitted to FAO, provides a comprehensive global assessment of the roles, values and status of animal genetic resources for food and agriculture, and threats affecting them. It is concluded that there is urgent need for research, capacity-building and improved management guidelines to promote sustainable utilization and address worrying levels of genetic erosion. The first State of the World's Plant Genetic Resources 3/ was published in 1998, and the second report will be presented to the 12th Regular Session of the CGRFA in 2009. The State of World Fisheries and Aquaculture and the State of World Aquaculture are regularly

2/ Available at http://www.fao.org/docrep/010/a1250e/a1250e00.htm

3/ Available at http://www.fao.org/ag/AGP/AGPS/Pgrfa/pdf/swrfull.pdf. Information is also available in the thematic background study Plant genetic resources of grassland and forage species (CGRFA11/Background Study Paper No. 40)

produced by FAO; their latest reports are accessible on FAO website 4/ and the State of the World's Aquatic Genetic Resources will be presented at the thirteenth regular session of the CGRFA, in 2011.

7. In addition, work undertaken by the CGRFA, as indicated in its multi-year programme of work, will include consideration of the internalization of the ecosystem approach to biodiversity management in agriculture, forestry and fisheries (envisaged for its fifteenth regular session) and, at its sixteenth regular session, the CGRFA will present The State of the World's Biodiversity for Food and Agriculture.

8. Regarding the functional components of agricultural biodiversity, FAO has undertaken a rapid assessment of status and trends of pollinators, which will be made available by FAO at the thirteenth meeting of SBSTTA. There is increasing evidence that pollinator populations are declining due to various factors such as introduced parasites, pesticides and destruction of habitats. Pollinator declines are showing adverse effects on crop production, with the potential to alter the structure and functioning of terrestrial ecosystems. More information is needed to document the decline and understand the causes. Regarding soil biodiversity, as part of its multi-year programme of work, the CGRFA included a review of a scoping study and key issues and work on micro-organisms and invertebrates, to be presented respectively at its twelfth, fourteenth and fifteenth regular sessions. 5/

9. Plant genetic resources (PGR) and animal genetic resources (AnGR) are conserved in the wild or on-farm and in *ex situ* facilities for short and long-term storage. There are more than 1,300 genebanks and more than 6 million accessions of food crops stored worldwide in *ex situ* germplasm collections.

10. The Millennium Ecosystem Assessment has described the state of cultivated systems and their impacts on ecosystem services, as follows: 6/

(a) Cultivated systems now occupy approximately 24 per cent of Earth's terrestrial surface. As the demand for food, feed, and fibre is increasing, farmers respond by expanding the cultivated area, intensifying production, or both;

(b) At the global level, conversion of natural habitat to agricultural uses is perhaps the single greatest threat to biodiversity. More land was converted to cropland in the 30 years after 1950 than in the 150 years between 1700 and 1850. Cultivated systems specialize in the provision of food, feed, and fibre, often at the expense of other ecosystem services; only four (crops, livestock, aquaculture, and carbon sequestration) of the 24 ecosystem services examined in the Millennium Ecosystem Assessment have been enhanced, while 15 (including soil cycling, pollination, and the capacity of agro-ecosystems to provide pest control) have been degraded. Cultivation has affected the provision of other services by conversion of biologically diverse natural grasslands, wetlands, and native forests into less diverse agro-ecosystems; by the choice of crop species grown and the pattern of cropping in time and space; and by the manner in which crops, soil, and water resources are managed at both plot and landscape levels. Cultivated systems have become the major global consumer of water and increasingly competing with other uses. In addition to water quantity trade-offs, intensification of food production involving increased use of fertilizers and other agricultural chemicals can lead to water pollution that degrades downstream freshwater, estuarine, and marine ecosystems and that limits downstream water use and raises its costs. Cultivation has also accelerated and modified the spatial patterns of nutrient cycling. Most pressing is

4/ http://www.fao.org/docrep/009/a0699e/A0699E00.htm and http://www.fao.org/docrep/009/a0874e/a0874e00.htm. Information is also available in The world's aquatic genetic resources: status and needs (CGRFA-11/07/15.2)

5/ Additional information in: Pollinators: neglected biodiversity of importance to food and agriculture (CGRFA-11/07/Inf.15) and Biodiversity of micro-organisms and insects for food and agriculture: status and needs (CGRFA-11/07/15.3)

6/ http://www.maweb.org. Volume 1, Chapter 26.

the disruption of the nitrogen cycle, caused primarily by the application of inorganic fertilizers. While some form of augmentation of naturally ''fixed'' nitrogen is an essential component of more productive cultivation, application of inorganic nitrogen increases emission of nitrous oxide, a potent greenhouse gas, and contributes to acid rain, soil acidification, and eutrophication and, through these changes, to biodiversity loss;

(c) Improved cultivation practices can conserve biodiversity in several ways: sustaining adequate yield increases on existing cropland in order to limit expansion of cultivation, enlightened management of cultivation mosaics at the landscape scale, and increasing diversity within cropping systems. Some cropping systems such as agroforestry and reduced tillage can contribute to carbon sequestration and thus mitigation of climate change.

11. In addition, the FAO report *Livestock's Long Shadow* assessed the environmental impact of the livestock sector, including on biodiversity. 7/ The environmental impacts of food and agricultural more broadly were considered by the FAO Committee on Agriculture in 2007. 8/

III. REVIEW OF THE IMPLEMENTATION OF THE PROGRAMME OF WORK ON AGRICULTURAL BIODIVERSITY AND ASSOCIATED INITIATIVES

12. A substantial amount of information on which the review of the implementation of the programme of work on agricultural biodiversity is based, was obtained through the inputs received following a survey by the Secretariat of the Convention on Biological Diversity completed by the Parties, and a FAO survey completed by international organizations. In either case, limitations associated with survey approaches apply. In the case of the national surveys, questions focused on selected activities, and not all activities of the programme of work.

A. Guiding principles of the programme of work on agricultural biodiversity

13. The programme of work on agricultural biodiversity, as adopted by the Conference of the Parties in decision V/5, was developed bearing in mind a number of guiding principles. These included the need to build upon existing international plans of action, programmes and strategies that have been agreed upon by countries and to promote synergy and coordination, and to avoid duplication, between relevant programmes of various international organizations, while respecting the mandates and existing programmes of work of each organization and the intergovernmental authority of the respective governing bodies, commissions and other forums. Since the adoption of the programme of work on agricultural biodiversity, new internationally agreed instruments and intergovernmental programmes have emerged in the international arena, and these need to be taken into account in this review. They are the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture and the multi-year programme of work of CGRFA.

14. As requested by the Commission, its Secretary transmitted the multi-year programme of work to the Executive Secretary of the Convention on Biological Diversity on 27 July 2007, inviting him to inform the Conference of the Parties that this will strengthen cooperation between FAO and the Convention in the many areas in which they collaborate. Given its particular importance for the review of this programme of work, the Commission's multi-year programme of work is contained in the annex to the present note.

7/ http://www.virtualcentre.org/en/library/key_pub/longshad/A0701E00.htm

8/ http://www.fao.org/unfao/bodies/coag/coag20/index_en.htm

B. Programme element 1: Assessments

15. Activities under programme element 1 are intended to provide an overview of the status and trends of the world's agricultural biodiversity (with a focus on its goods and services) and its drivers, in particular the causes of its loss, as well of local knowledge and practices of its management.

1. Synthesis of information from the third national and thematic reports

16. A large majority of the Parties (80 per cent 9/) reported having undertaken assessments of different components of agricultural biodiversity, in particular PGR and AnGR, mainly as a contribution to the FAO State of the World's Genetic Resources mentioned in section II above. Only a few Parties (10 per cent) carried out assessments of soil biodiversity (including microorganisms important for agro-products, food processing and nitrogen cycling) although some Parties also reported having developed specific assessments of additional components of agricultural biodiversity that provide ecological services, including targeted assessments on pest management (29 per cent), pollinators (17 per cent) and nutrient cycling (15 per cent).

17. Many Parties (62 per cent) reported monitoring the status and trends of agricultural biodiversity and other components of biodiversity in agro-ecosystems. Of these, 22 per cent observed no change since 1993, whereas 50 per cent observed an overall degradation. Several Parties also reported on the direct (e.g. overexploitation, overgrazing, introduction of invasive alien species, climate change and pollution) and indirect (lack of adequate laws, policies, technologies, knowledge and awareness) causes of loss of agricultural biodiversity, although in 28 per cent of Parties, efforts are being made to restore or rehabilitate agro-ecosystems, to increase population of local races or reintroduce some species. However, only a few Parties provided information on assessment and monitoring tools and indicators.

18. Many Parties (58 per cent) reported having carried out an assessment of the knowledge, innovations and practices of farmers and indigenous and local communities, in particular on agricultural management practices (e.g., crops, land, manure, water), the use of neglected and underutilized crop species, the impacts of minor crops on the livelihoods of farmers, and indigenous and traditional knowledge and management practices on water, soil fertility, seed conservation and cropping systems. Only a few Parties mentioned that they addressed the social and economic issues related to agro-biodiversity.

19. Many Parties (65 per cent) reported having undertaken assessments of the interactions between agricultural practices and the conservation and sustainable use of the components of agricultural biodiversity. Few socio-economic studies were carried out to evaluate the capability of farming systems to provide environmental protection and economic viability.

20. Most successful activities have been reported to be mainly due to the implementation of national programmes under CGRFA and to the cooperation and financial support of relevant international organizations. However, several obstacles to the implementation of this programme element remain, including lack of (i) national assessments and coordinated monitoring of the components of agricultural biodiversity; (particularly indigenous plant and animal species, microorganisms, pollinators, pests and organisms involved in nutrient cycling); (ii) methodological, technical and financial resources; (iii) appropriate and widely accepted agro-environmental indicators; (iv) awareness of the goods and services provided by the different levels and functions of agro-biodiversity; (v) coordination amongst responsible agencies; and (vi) political will to address the challenges and opportunities that local agricultural

9/ All the following percentages are based on the 130 third national reports submitted by Parties as of 14 Sept.ember2007.

practices present for the conservation and sustainable use of biodiversity. In addition, technological change and increasing trade are accelerating the loss of traditional agro-ecological knowledge.

2. Synthesis of activities from international organizations

21. Global assessments overseen by the FAO CGRFA (see section II above) have been completed, are ongoing or planned, and are supported by number of international organizations. Several ongoing and completed international assessments such as the MA and the IAASTD, and analyses based on the Global Methodology for Mapping Human Impacts on the Biosphere also contribute to the implementation of activities included in the programme of work.

22. With regard to traditional and local knowledge, international organizations focused on a number of issues including farmer seed systems, management of PGR, documenting local knowledge on wild relatives of crops and livestock, medicinal and herbal species, traditional agricultural practices and potential of ethno-veterinary knowledge. In general, an increase in the use of participatory approaches implies that indigenous and local knowledge is more often being taken into account in defining the needs of communities and in project formulation. Several international initiatives are supporting efforts to better value and protect traditional and local knowledge associated with agricultural biodiversity (e.g. UNDP/GEF/FAO "Globally Important Agricultural Heritage Systems").

23. Many projects are underway to examine ecological interactions and their potential benefits for agriculture, particularly for pest management (e.g. work undertaken by FAO, CGIAR centers, CABI, UNEP/GEF, IUCN) and to assess the interactions between agricultural practices and the conservation and sustainable use of components of biodiversity (e.g., the work of the GLOBIO consortium as part of the International Assessment of Agricultural Science and Technology for Development (IAASTD), DIVERSITAS agroBIODIVERSITY).

24. Considerable work has been carried out by international organizations on methods and techniques for assessing and monitoring the status and trends of agricultural biodiversity and other components of biodiversity in agro-ecosystems (in particular on indicators). The main challenge is to draw together, coordinate and refine the information generated from different sources to be useful and coherent on a global scale. Databases, case-studies and information on best practices, are increasingly being made available on the Internet; the challenge is to ensure their accessibility and usefulness globally.

C. Programme element 2: Adaptive management

25. Activities under this programme element are intended to identify management practices, technologies and policies that promote the positive and mitigate the negative impacts of agriculture on biodiversity, and enhance productivity and the capacity to sustain livelihoods, by expanding knowledge, understanding and awareness of the multiple goods and services provided by agricultural biodiversity.

1. Synthesis of information from the third national and thematic reports

26. Many Parties (68 per cent) reported having undertaken activities in these areas. Among them, 62 per cent specified management practices, including economic incentives, agro-environmental measures, training, promotion of traditional farming practices and networks. A number of Parties (13 per cent) also reported having identified technologies, mainly genetic tools to improve crop varieties, and 25 per cent identified policies related to biodiversity conservation, environmental protection, use and conservation of genetic resources, good professional agricultural practices, use of agrochemicals and manure and use of GMOs.

27. Significant progress has been made in the implementation of this programme element. However, comments provided by Parties did not cover all activities of adaptive management as only one question was asked, giving only a limited overview of activities effectively undertaken by Parties.

28. Factors that contributed to the successful implementation of this programme element included, *inter alia*, the cooperation and/or financial support of relevant international organizations. The main obstacles reported include lack of technical, technological and financial resources, lack of extension and dissemination programmes, slow progress on policy implementation, and influence of factors such as increased climate variability.

2. Synthesis of activities from international organizations

29. A wide range of case-studies has been undertaken by different organizations, in different contexts, at different levels. Issues addressed are related to, among others, PGR and AnGR, goods and services, pollinators, soil biodiversity, nutrition, potential of wild species for local people's livelihoods, organic farming, access and benefit sharing, and protecting community rights over their traditional knowledge. Nearly all organization included in the survey have made some contribution to this programme element, particularly regarding the analysis and dissemination of ways to promote the positive and mitigate the negative impacts of agriculture on biodiversity. Integrated Pest Management (IPM) 10/ is one major focus of these activities. For years, FAO has promoted IPM through conservation of natural enemies as a way of reducing chemical pesticide use. A number of organizations have also noted the promotion and use of integrated and/or participatory approaches such as Farmer Field Schools (FFS) and community-based biodiversity management. There have been also some contributions from ongoing international efforts in the context of the Convention on Biological Diversity, on both the ecosystem approach 11/ and sustainable use. However, there have been limited efforts to synthesize and disseminate the findings of these studies.

30. Studies showing the financial value of biodiversity-friendly practices have been reported by many organizations including efforts to develop mechanisms for benefiting poor farmers through payments for ecosystem services (e.g. FAO). Most work being carried out in the areas of trade and marketing relate to the promotion of underutilized and new crops, market chain analysis and trade issues relating to PGR. In the area of policy as it contributes to adaptive management, there is considerable ongoing work on intellectual property rights, particularly on protecting the rights of local communities to landraces.

D. Programme element 3: Capacity-building

31. Activities under this programme element are intended to strengthen the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders to manage agricultural biodiversity sustainably so as to increase benefits and promote awareness and responsible action.

1. Synthesis of information from the third national and thematic reports

32. Based on questions mainly related to access and benefit-sharing, most Parties (72 per cent) reported having effectively enhanced capacity-building, in particular for local and indigenous communities, crop and livestock farmers, farmers' organizations, rural women and other stakeholders including food industries. Areas and components where capacity has been increased cover agricultural biodiversity management (PGR and AnGR, water, land and vegetation), conversion to organic farming,

10/ The sustainable management of biodiversity for biological control in food and agriculture: status and needs (CGRFA 11/Background Study Paper No. 38).

11/ The ecosystem approach applied to food and agriculture: status and needs (CGRFA-11/07/15.4 Rev.1).

public awareness, agro-forestry and traditional practices. Specific strategies and methodologies for *in situ* conservation, sustainable use and management of agricultural biodiversity developed by Parties were related to training, promotion and diffusion activities, implementation of policies and economic incentives to raise awareness, develop and provide information and skills and support to farmers.

33. Less than one third of Parties (28 per cent) reported having improved the policy environment to support local-level management of agricultural biodiversity. Of these 15 per cent established benefit-sharing arrangements and 19 per cent developed incentives measures. Examples of policy improvements focused on genetic resources conservation, farmers and indigenous peoples' rights, participatory approaches to rural development and poverty reduction, and integrated farm management.

34. Important progress was observed in capacity development activities, due to cooperation between farmers and Government, industries, research institutions, nature museums, NGOs and extension officers, and cooperation and financial support of national and international organizations. However, only a few Parties reported having promoted opportunities to participate in the development and implementation of national strategies, plans and programmes for agricultural biodiversity, and improved the policy environment to support local-level management of agricultural biodiversity. This was reported to be due to a lack of relevant implementation for economic incentives and benefit-sharing arrangements, a slow policy change and implementation, and difficulties in integrating policies across different sectors.

2. Synthesis of activities from international organizations

35. Success stories in building capacity for improving the conservation and sustainable use of agricultural biodiversity have shown that bottom-up approaches are particularly effective. Networks and partnership building can assist in this process. Participatory and adaptive approaches are key to enhancing local capacities in the management of agro-ecosystems. An increasing number of international organizations are utilizing approaches such as FFS, farmer participatory research and participatory plant breeding, which all contribute to improving productivity and enhancing local people's understanding of the ecosystems on which they depend and hence increase their capacity to manage them in the long term.

36. Activities are ongoing to give local communities a voice in policy issues, for example the promotion of 'citizen's juries' to enable small farmers and indigenous peoples to participate in assessing different food, farming and rural development futures, and voice their priorities with regard to policy futures. Many international organizations carry out capacity-building activities, including technical assistance requested by countries to strengthen capacities from the field to the policy-makers' level. Linking local and policy levels is one area where international organizations can, and do, have an added value.

37. Many organizations carry out awareness-raising activities through websites, newsletters and other publications, within the business community or in the context of campaigns.

E. Programme element 4: Mainstreaming

38. Activities under this programme element are intended to support the development of national plans and strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes.

1. Synthesis of information from the third national and thematic reports

39. Many Parties (57 per cent) reported having mainstreamed national plans or strategies for the conservation and sustainable use of agricultural biodiversity in sectoral and cross-sectoral plans and programmes that deal with rural development, poverty reduction, economic development, desertification,

protected areas, science and technology, sport and tourism and soil conservation for example. National strategies and plans cover environment, PGR, sustainable development, rural and agricultural development.

40. A majority of Parties (81 per cent) reported being active in supporting the institutional framework and policy and planning mechanisms for mainstreaming agricultural biodiversity in agricultural strategies and action plans, and into wider strategies and action plans for biodiversity. However, only a few Parties reported an increase in the awareness of farmers and citizens following the implementation of policies or networks, and an increase in collaboration with the private sector, productivity and food security.

41. Many Parties (69 per cent) reported having promoted activities related to *in situ* and *ex situ* conservation of the variability of genetic resources for food and agriculture. However, insufficient attention seems to have been given to the conservation of wild relatives of domesticated species and the conservation of species in their centres of origin, and to awareness-raising activities about the value of *in situ* and *ex situ* genetic resources conservation.

42. Few details were provided by Parties on tools developed to promote public awareness of the goods and services derived from agricultural biodiversity and to support the development or adaptation of relevant systems of information, early warning and communication to enable effective assessment of the state of agricultural biodiversity and threats to it, in support of national strategies and action plans.

43. Most successful activities have been reported to be partly due to the implementation of the National Biodiversity Strategy and Action Plan (NBSAP) and to cooperation and financial support of national and international organizations (e.g. FAO, UNDP, CGIAR, GEF 12/). Major obstacles mentioned include lack of coordination to improve efficiency of sectoral policies, lack of synergy between legislation on plant protection products, seeds legislation and legislation about genetically modified organisms (GMOs), lack of a long-term vision within government agencies and lack of adequate financial resources.

2. Synthesis of activities from international organizations

44. A wide range of support is being provided by international organizations, in particular FAO and the CGIAR Centers, to countries to implement international agreements and to harmonize related policies and laws. The process of preparation of the Second State of the World's Plant Genetic Resources presents an opportunity to mainstream components of agricultural biodiversity, while the completion of the State of the World's Animal Genetic Resources should further strengthen intergovernmental cooperation and action for the conservation and use of AnGR.

45. Information systems on genetic resource for food and agriculture are becoming well-established. Early warning systems are in place or under development for PGR and AnGR, as well as for animal diseases or invasive species. A wide range of activities, including assessments, are ongoing to promote public awareness of the goods and services provided by agricultural biodiversity, in particular for the conservation of genetic resources. Most of the guidelines reported have been produced on issues relating to PGRFA. Other guidelines have been produced on issues such as invasive species management, or more general guidelines on integrating agriculture and biodiversity conservation policies and the development of policies that enable better conservation and sustainable use of biodiversity.

12/ According to the project database of the Global Environment Facility (GEF) accessible at www.gefonline.org, between 1998 and 2005, GEF has supported financially at least 18 projects related to agricultural biodiversity, in 16 countries, that amount to approximately 16 US$M (about 1% of the amount of all the biodiversity projects financed by GEF during this period).

F. International Initiative for the Conservation and Sustainable Use of Pollinators

1. Synthesis of information from the third national and thematic reports

46. The limited comments received from the Parties do not allow a comprehensive overview of activities undertaken on the implementation of the plan of action for the initiative. Available information indicates that one third of Parties reported having undertaken activities, including monitoring of the status and trends of pollinators, identification of causes of negative impacts on pollinators and management tools that could reduce them, conservation activities and assessment of the goods and services provided by pollinators. A few Parties provided additional comments on the integration of pollinator conservation into their national biodiversity strategy and action plan and regional collaboration, and on awareness projects on pollinators.

47. Obstacles in the implementation of the plan of action reported by Parties included a lack of expertise and knowledge on pollinators, adequate financial and technical resources, lack of coordination in monitoring the status and trends of pollinators and lack of long-term vision within government agencies.

2. Synthesis of activities from international organizations

48. In many respects, the establishment of this initiative has facilitated timely and coordinated efforts globally to attain the objectives of the initiative's plan of action. The large number of case-studies that have been submitted indicates the keen interest in developing adaptive management of pollinators. At the same time, much of the work carried out has focused on research, and actual implementation and adoption of pollinator-friendly practices needs to be field-tested by farmers and land managers. Greater public appreciation of the role of wild pollination services in sustaining pollination even when managed pollinators are suffering setbacks would seem an ideal opportunity to make the link between biodiversity conservation and human livelihoods.

49. Two interlinked blocks hampering the conservation and management of pollinators are the taxonomic impediment and gaps in scientific knowledge. Proper identification of pollinators is needed to access information on their biology, and even then, information on the key resources needed by pollinators is often lacking. While nothing can substitute for solid life-history information on pollinating species, emerging technologies that permit pooling and sharing of information are helping to make the available information more accessible.

G. International initiative for the conservation and sustainable use of soil biodiversity

1. Synthesis of information from the third national and thematic reports

50. In the third national reports, Parties were not requested to provide information on the implementation of this initiative.

2. Synthesis of activities from international organizations

51. Work on soil biodiversity has been conducted in the areas of assessment, monitoring and mainstreaming under programmes and projects conducted by institutions. In general, some groups of soil biota had been studied more than others; however there is limited coordination of these efforts.

52. Regarding objective 1, *Sharing of knowledge and information and awareness-raising*, while some case-studies exist, 13/ new case-studies would allow for the needed updated information. There is

13/ Some of these are available at http://www.fao.org/landandwater/agll/soilbiod/default.stm

still limited coordinated effort to gather data and information specific to soil biodiversity, and much more work is required to enhance public awareness and make relevant information widely available. Regarding objective 2, *Capacity-building for the development and transfer of knowledge of soil biodiversity and ecosystem management into land use and soil management practices*, the promotion of adaptive management approaches, as well as capacity-building efforts and some targeted participatory research is ongoing. The relevant work undertaken on indicators has the potential to contribute to broader efforts to develop tools, build information and identify and develop datasets on soil biodiversity at national level. Taxonomic expertise lacks in many countries for most of the soil biota groups and efforts to fill these gaps would also make a significant contribution to the efforts of the Global Taxonomy Initiative. Technical expertise and capacity development is provided at the technical level and only for some groups of soil organisms. Nonetheless, there is a need for training on soil biodiversity and function at the farmer level with advocacy material and training manuals. Regarding objective 3, *Strengthening collaboration among actors and institutions and mainstreaming soil biodiversity and biological management into agricultural and land management and rehabilitation programmes*, activities have so far been limited. There is a need to strengthen collaborative mechanisms between sectors for ensuring mainstreaming of soil biodiversity and biological management.

H. Cross-cutting initiative on biodiversity for food and nutrition

1. Synthesis of information from the third national and thematic reports

53. In the third national reports, Parties were not requested to provide information on the implementation of this initiative.

2. Synthesis of activities from international organizations

54. This initiative, led by FAO and Bioversity International, has made considerable progress relative to the short time since its inception, highlighting the importance of this issue as well as the impetus gained from the establishment of the initiative. Regarding element 1, *Developing and documenting knowledge*, particular needs have been identified in terms of biodiversity indicators in food composition and nutritional analysis. Regarding element 2, *Integration of biodiversity, food and nutrition issues into research and policy instruments*, FAO has initiated the integration of biodiversity concerns into nutrition instruments in the context of its programme of work in nutrition. Work is also ongoing in the area of food composition analysis and dietary guidelines, as well as integration of biodiversity for food and nutrition concerns into food security and poverty reduction. More efforts are needed to integrate consideration of the role biodiversity for food and nutrition into health policies at national and international levels. Activities under element 3, *Conserving and promoting wider use of biodiversity for food and nutrition* are being carried out within the framework of the whole programme of work on agricultural biodiversity. Regarding element 4, *Public awareness*, a range of public awareness materials on the links between biodiversity, food and nutrition, and the importance of biodiversity conservation to meeting health and development objectives have been made available, or are under development.

I. Genetic use restriction technologies (GURTs)

55. In section III of decision V/5, the Conference of the Parties recommended that in the absence of reliable data on GURTs, without which there is an inadequate basis on which to assess their potential risks, and in accordance with the precautionary approach, products incorporating such technologies should not be approved by Parties for field testing until appropriate scientific data can justify such testing, and for commercial use until appropriate, authorized and strictly controlled scientific assessments with regard to, *inter alia*, their ecological and socio-economic impacts and any adverse effects for biological diversity, food security and human health have been carried out in a transparent manner and the conditions for their safe and beneficial use validated. The Conference of the Parties also encouraged

Parties and Governments to identify ways and means to address the potential impacts of GURTs on the *in situ* and *ex situ* conservation and sustainable use, including food security, of agricultural biodiversity.

56. In their third national reports, more than one quarter of Parties reported having identified such ways and means, including through laws and policies, establishment of biosafety committees, establishment of facilities for research on GURTs and implementation of environmental risk assessment. A few Parties considered GURTs as GMOs, with high risks for human health and the environment, and which can likely harm indigenous and local communities. The potential impacts of GURTs were subsequently considered by an Ad Hoc Technical Expert Group, SBSTTA, the Working Group on Article 8(j) and FAO. At its eighth meeting, the Conference of the Parties reaffirmed section III of decision V/5.

J. Consideration of biofuels in the programme of work on agricultural biodiversity

57. Biofuel production and use can have both beneficial and adverse effects on biodiversity, including agricultural biodiversity, and human well-being (SBSTTA recommendation XII/7, paragraph 3). Although there are gaps in our knowledge and information associated with the impact on biodiversity of biofuel production and use, current data indicate that large-scale production of liquid biofuel can have positive greenhouse gas balances and contribute to the reduction of emissions, an important indirect contribution to the conservation of biodiversity. Large-scale biofuel production can also have adverse impacts on biodiversity, by contributing, *inter alia*, to habitat loss, fragmentation and degradation, increased greenhouse gas emissions from degraded carbon sinks and deforestation, increased water pollution from chemical inputs, soil degradation and erosion, uncontrolled introduction and spread of GMOs and invasive alien species, and overexploitation and increase in food prices.

58. Options for promoting sustainable biofuel production exist. They include: (i) the application of guidelines and standards in the framework of the ecosystem approach; (ii) the application of biodiversity-inclusive guidelines on environmental impact assessment and strategic environmental assessment; (iii) the development of sound policy frameworks that contribute to both the mitigation of greenhouse gas emissions and the conservation and sustainable use of biodiversity; and (iv) the promotion of research to improve the economy and yields of energy biomass and develop technologies for second-generation feedstocks and other materials. These options are spelt out or implicit in the elements of the programme of work on agricultural biodiversity. However, there is a need to enhance awareness on issues relating to biofuels among policy makers, farmers, business, and other stakeholders, to enable fully-informed decision making (see more details in the information document on new and emerging issues relating to the conservation and sustainable use of biodiversity: contributions to the electronic forum on Biofuels, prepared for the twelfth meeting of SBSTTA (UNEP/CBD/SBSTTA/12/INF/16)).

K. Linkages between the programme of work on agricultural biodiversity and climate change

59. SBSTTA, in recommendation XII/5, requested the Executive Secretary, when preparing the in-depth review of the programme of work on agricultural biodiversity, to identify elements of the guidance on climate-change impact and response activities already included in the programme of work, assess the state of implementation, and identify gaps in implementation and suggest ways to overcome them. T he information is available in an information note by the Executive Secretary on pilot guidance on the integration of climate-change impact and response activities in the agricultural biodiversity programme of work (UNEP/CBD/SBSTTA/13/INF/3).

60. As reported in the Millennium Ecosystem Assessment, the impact of cultivation on climate regulation can best be viewed in two distinct stages. When natural ecosystems have been converted for cultivation, carbon-based greenhouse gases are generally released and carbon sequestration potential is reduced to an extent dependent upon the original land cover and the means of conversion. In fact, about

70 per cent of anthropogenic nitrous oxide gas emissions are attributable to agriculture. Thereafter, the impact of cultivation on climate regulation is intimately linked to production-system choices and management practices such that sustainable agriculture represents an opportunity for climate-change mitigation.

61. Under changing climatic conditions, agricultural biodiversity will become increasingly important. Many of these resources will, however, become more threatened, as climate change erodes biodiversity and destabilizes ecosystems, particularly in drylands. At the same time, the genetic resources used by the agricultural sector will become more crucial in developing strategies to adapt to climate change, so as to ensure the sustained increase that will be necessary to feed the world in 2050.

62. The current programme of work presents some gaps in terms of addressing the challenges and shifting needs under climate change. It does not address the role of agricultural biodiversity in climate change adaptation planning or the vulnerability of agricultural biodiversity to the impacts of climate change. Furthermore, there exist significant information gaps on agricultural biodiversity and climate change links with regards to livestock, food and nutrition, soil biodiversity and pollinators.

L. Applicability of the Addis Ababa Principles and Guidelines to the programme of work on agricultural biodiversity

63. The Conference of the Parties, through its decision VII/12 paragraph 3, requested SBSTTA, prior to the ninth meeting of the Conference of the Parties, to explore the applicability of the Addis Ababa Principles and Guidelines to agricultural biodiversity, in particular domesticated species, breeds and varieties, and make appropriate recommendations. The decision also entails that SBSTTA will consider the range of use options and management practices covered by the term agricultural biodiversity.

64. Information is available in an information document on the applicability of the Addis Ababa Principles and Guidelines on sustainable use of biological diversity to the sustainable use of agricultural biodiversity (UNEP/CBD/SBSTTA/13/INF/4), which has been prepared on the basis of the outcomes of three regional workshops, 14/ the third national reports and other reports from relevant bodies and inputs from the relevant international partners, in particular FAO. This document concludes that all 14 Addis Ababa principles and guidelines for the sustainable use of biodiversity apply to the sustainable use of agricultural biodiversity. Principles 1 to 6, 8, 9, 11, 12, and 14 are applicable without changes. However, participants of the workshops suggested that principles 7, 10, and 13 require adjustments under the following conditions:

(a) Principle 7 (The spatial and temporal scale of management should be compatible with the ecological and socio-economic scales of the use and its impact) should be applied with special consideration of agriculture's vast spatial scale (indeed, cultivated systems alone now account for more than 24 per cent of Earth's terrestrial surface and their management needs surpass the scale of land under use) and relatively short-term temporal scale (the cycle of agricultural practices is continuously changing the natural dynamics of biological communities);

(b) When applying Principle 10 (International, national policies should take into account: current and potential values derived from the use of biodiversity; intrinsic and other non-economic values of biodiversity; and market forces affecting the values and use) to agricultural biodiversity, the first point

14/ Since the seventh meeting of Conference of the Parties, the Executive Secretary organized a series of regional technical expert workshops: the African Regional Workshop on Sustainable Use of Biological Diversity in Nairobi (Kenya), from 12 to 15 December 2006 (UNEP/CBD/RW-SU-Afr/1/2); the Latin American and Caribbean Workshop, in Buenos Aires (Argentina), from 13 to 16 September 2005 (UNEP/CBD/SBSTTA/11/INF/21); and the Eastern European Workshop, in Moscow (Russia), from 30 May to 2 June 2005 (UNEP/CBD/SBSTTA/11/INF/6).

could be revised and read as "current and potential values derived from the use of biological diversity, including natural and agricultural systems";

(c) With regard to the application of Principle 13 (The costs of management and conservation of biological diversity should be internalized within the area of management and reflected in the distribution of the benefits from the use), it should be noted that the cost of some components of agricultural biodiversity (gene banks, maintenance of traditional and wild relatives of crops) can not be fully internalized in the management area of agriculture and requires larger financing mechanisms.

IV. OVERALL ASSESSMENT OF PROGRESS

A. Contributions of the programme of work on agricultural biodiversity to the implementation of the goals of the Convention and the 2010 biodiversity targets and to achieving the Millennium Development Goals and other relevant global goals

65. While the many actions reported will have contributed to the conservation and sustainable use of agricultural biodiversity, information collected from national reports and other reports is insufficient to indicate clearly the extent of progress made to the achievement of the 2010 biodiversity target. It is clear that a broader range of activities are required to reduce significantly the impact of agriculture on biodiversity and ecosystems more broadly, and that this would be promoted by wider application of the ecosystem approach to agriculture.

66. The World Summit on Sustainable Development (Johannesburg, 2002) recognized that agriculture plays a crucial role in addressing the needs of a growing global population, and is inextricably linked to poverty eradication, especially in developing countries. This message is reinforced in the World Development Report 2008: "Agriculture for Development".

67. The implementation of the programme of work on agricultural biodiversity, together with the wider application of the ecosystem approach, has the potential to contribute to achieving the Millennium Development Goals (MDGs), in particular (i) Goal 1 (Eradicate extreme poverty and hunger) by improving agricultural productivity and the provision of food and services relating to human nutrition, and (ii) Goal 7 (Ensure environmental sustainability), particularly the target "Integrate principles of sustainable development into country policies and programmes and to reverse the loss of environmental resources". The programme of work can also contribute indirectly to several other MDGs: Goal 8 (Develop a global partnership for development), and Goal 4 (Reduce child mortality), Goal 5 (Improve maternal health) and Goal 6 (Combat HIV/AIDS, malaria, and other diseases) by increasing the diversity and nutritional quality of food production.

68. It is necessary to identify or develop indicators and methods to objectively evaluate how the implementation of the programme of work on agricultural biodiversity contributes to the implementation of the Convention objectives and the Strategic Plan of the Convention, including the reduction of the rate of biodiversity loss and the contribution to poverty alleviation. Goals and targets may also be identified to be integrated into the Strategic plan of the Convention post-2010. There is also a need to gather data to illustrate the linkages between the implementation of the programme of work on agricultural biodiversity and the achievement of the MDGs.

B. Conclusions

69. The review of inputs from Governments and international organizations on the implementation of the four programme elements and the three international initiatives suggests that the programme of work on agricultural biodiversity is a relevant framework to achieve the objectives of the Convention.

The review highlighted areas: (i) where gaps have been identified (e.g. knowledge of the status and trends of some components of agricultural biodiversity); (ii) that need to be strengthened in order to contribute effectively to the conservation and sustainable use of agricultural biodiversity (e.g. capacity-building, mainstreaming); and (iii) that require targeted action (e.g. the cross-cutting initiatives). The review also showed that the programme of work has the necessary flexibility to address new and emerging global issues (e.g. climate change, biofuels).

70. The international initiatives and their plans of action have proven to be particularly effective in contributing towards the objectives of the programme of work. The case of pollinators has made this very evident, illustrating the impetus that the endorsement of this initiative has had in mobilizing partners. It is proposed to maintain the international initiatives, and capitalize on the momentum they have created.

71. Since the adoption of the programme of work on agricultural biodiversity, new internationally agreed instruments and intergovernmental programmes related to agricultural biodiversity have emerged within the United Nations System. Much is to be gained by promoting synergy and coordination with them, and avoiding duplication, in the next phase of implementation of the programme of work. In particular, with the entry into force of the International Treaty on Plant Genetic Resources for Food and Agriculture and the adoption of the multi-year programme of work of the FAO intergovernmental Commission on Genetic Resources for Food and Agriculture, which covers all biodiversity for food and agriculture, FAO is now better placed to further cooperate with the Convention in order to ensure the conservation and sustainable use of agricultural biodiversity, and the sharing of benefits arising of its use, for sustainable agriculture and food security.

72. Even if the third national reports did not give a comprehensive overview of all the activities undertaken by the Parties (in particular on tools and indicators used and/or developed to assess and monitor impacts of the implemented activities), the implementation of the programme of work is well underway, often with the cooperation and the support of relevant international organizations. However, more work remains to be done to reach the conservation and sustainable use of agricultural biodiversity, and biodiversity in general. The analysis suggests the need to strengthen: (i) the use of the ecosystem approach, both at the ground and policy level; (ii) intersectoral cooperation, synergy and coordination at the national level, in particular between agriculture and environment sectors; and (iii) the capacity of stakeholders for a better understanding of the importance and sustainable use of agricultural biodiversity in different sectors.

73. Since the adoption of the programme of work on agricultural biodiversity in 2000, the Strategic Plan and 2010 biodiversity target have been adopted. In order to make the programme of work consistent with the other programmes of work, and the Strategic Plan of the Convention on Biological Diversity, a vision and mission are proposed in the suggested recommendations.

Annex

THE CGRFA MULTI-YEAR PROGRAMME OF WORK: MAJOR OUTPUTS AND MILESTONES

	12th Session	13th Session	14th Session	15th Session	16th Session
Plant Genetic Resources (PGRFA)	Presentation of *The State of the World's Plant Genetic Resources*	Consideration of the updated *Global Plan of Action* for adoption, and review of cooperation with the International Treaty			Update of *The State of the World's Plant Genetic Resources*
Animal Genetic Resources (AnGR)	Follow-up to the Interlaken Conference		Review of implementation of Interlaken outcomes		Update of *The State of the World's Animal Genetic Resources*
Aquatic Genetic Resources (AqGR)		Review of information base for aquatic genetic resources, and key issues for *The State of the World's Aquatic Genetic Resources*	Presentation of *The State of the World's Aquatic Genetic Resources*	Development of elements related to the *Code of Conduct of Responsible Fisheries* aimed to maintain a broad genetic basis and to ensure sustainable use and conservation of aquatic genetic resources	
Forest Genetic Resources (FoGR)	Analysis of key issues in forest genetic resources, for *The State of the World's Forest Genetic Resources*		Presentation of *The State of the World's Forest Genetic Resources*		
Micro-organisms and invertebrates	Review of scoping study on Micro-organisms and invertebrates		Review of key issues on micro-organisms and invertebrates	Review of work on micro-organisms and invertebrates	
Cross-sectorial matters	Consideration of policies and arrangements for access and benefit-sharing for genetic resources for food and agriculture	Review ways and means [of promoting][considering] [for] the application and integration of biotechnologies in the conservation and utilization of genetic resources [as a basis for future work such as, the development of guidelines, consideration of Codes of Conduct or other work]	Review of all relevant international targets and indicators for biodiversity for food and food and agriculture	Consideration of the internalization of the ecosystem approach to biodiversity management in agriculture, forestry and fisheries Review of contribution of biodiversity for food and agriculture to the achievement of the Millennium Development Goals	Presentation of *The State of the World's Biodiversity for Food and Agriculture*
Management of the Multi-year Programme of Work		Progress Report/ Periodic assessment/ Review of the Multi-year Programme of Work		Progress Report/ Periodic assessment/ Review of the Multi-year Programme of Work	
