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AFRICAN REGIONAL WORKSHOP ON SUSTAINABLE USE OF BIOLOGICAL DIVERSITY
Nairobi, 12–15 December 2006
Item 6 of the provisional agenda*

ECOSYSTEM SERVICES ASSESSMENT AND ADAPTIVE MANAGEMENT

Background note by the Secretariat

I. INTRODUCTION

1. In paragraph 5 of decision VII/12, on sustainable use, the Conference of the Parties (COP) to the Convention on Biological Diversity invited Parties, Governments, and relevant organizations to initiate a process for the implementation of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity, and requested the Executive Secretary, *inter alia*, "to convene a series of technical experts workshops on ecosystem services assessment, financial costs and benefits associated with conservation of biodiversity, and sustainable use of biological resources".

2. In response to this request, the Executive Secretary is organizing a series of technical expert regional workshops with financial assistance from the Government of the Netherlands. The African Regional Workshop on Sustainable Use of Biological Diversity is the third such regional workshop.

3. This note describes the purpose and approach of the African Regional Workshop on Sustainable Use of Biological Diversity, to be held in Nairobi, from 12 to 15 December 2005. It outlines:

(a) The purpose and scope of the Workshop (section II);

(b) Additional information for consideration in the Workshop (section III);

(c) The proposed output of the Workshop (section IV).

II. PURPOSE AND SCOPE OF THE WORKSHOP

4. In accordance with paragraph 5 of decision VII/12, the Workshop will focus on ecosystem services assessment, financial costs and benefits associated with conservation of biodiversity, and sustainable use of biological resources. Further to paragraph 3 of decision VII/12, the Workshop is to place a special emphasis on agricultural biodiversity in particular domesticated species, breeds and

* UNEP/CBD/RW-SU-Afr/1/1.

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varieties. 1/ . It is intended to provide a forum for government officials and practitioners to enhance their awareness and understanding of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity, to analyse their applicability, with a focus on applicability to agricultural biodiversity, and promote the use of these guidelines in an integrated manner, as a contribution to facilitating the achievement of the 2010 target, sustainable development and poverty alleviation.

III. ADDITIONAL INFORMATION

5. Case-studies submitted in the two previous regional workshops focused on: (i) best practices and lessons learned from the use of components of biological diversity; (ii) implementation of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity; (iii) lessons learned as regards ecosystem services assessment; and (iv) lessons learned as regards financial costs and benefits associated with the conservation and sustainable use of biological diversity.

6. Previous regional workshops reports clarified the range of use options and management practices covered by the term "agricultural biodiversity". Full reports can be downloaded from:

- Central and Eastern European Regional Expert Workshop
  http://www.biodiv.org/doc/meetings/suse/rwsucee-01/official/rwsucee-01-03-en.pdf
- Latin American and Caribbean Regional Expert Workshop
  http://www.biodiv.org/doc/meetings/sbstta/sbstta-11/information/sbstta-11-inf-21-en.pdf

7. Previous workshops emphasized building the capacity of participants to understand the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity and the Ecosystem Approach, as they apply to agriculture, forestry and other related economic activities. From discussions, three main views and approaches for agricultural biodiversity were exposed, and participants agreed that sustainable agriculture depends on their balanced interactions. Those have been summarized by the facilitator to the Latin American and Caribbean Regional Expert Workshop as:

(a) The "conservationist view" in which landscape conversion may be perceived as a threat to biodiversity – containment, impact minimization and preservation of biodiversity in and around agricultural activities are the main tools towards sustainability;

(b) The "gene bank approach" whose focus is on the protection of seed and crop diversity as a strategic instrument for food security, crop resilience, crop variability, and for socioeconomic development;

(c) The "means of production view" (in a sustainable use perspective) in which the focus is placed on agribusiness and where diversity is seen as a means of production. Here, a single focus on poverty alleviation, productivity and revenue generation could lead to an imbalance that ultimately facilitates desertification, soil erosion, and technological dependency.

8. These views should be juxtaposed to address concrete challenges, *inter alia*, livelihood security and ecosystem services, livestock management, pastoralist and traditional practices, ecosystem productivity restoration. Other issues to consider include the role of biodiversity in ecosystems supporting agriculture (ecosystem services).

Review of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity

9. The fourteen Addis Ababa Principles for the Sustainable Use of Biodiversity present a framework for advising Governments, indigenous and local communities, resource managers, the private sector and other stakeholders, on how they can ensure that their uses of biodiversity components will not lead to the long-term decline of biological diversity. Each principle is followed by a rationale, a thorough

1/ Agricultural biodiversity includes all components of biological diversity of relevance to food and agriculture – the variety and variability of plants, animals and micro-organisms at genetic, species and ecosystem level which are necessary to sustain key functions in the agro-ecosystem, its structures and processes (in accordance with annex I to decision III/11).

explanation and exemplification of the motivation and meaning of the principle, and the operational guidelines, which provide functional advice on the implementation of the principle.

10. These fourteen inter-dependent principles and associated practical guidelines for their implementation were identified through a series of regional and thematic focused workshops in which the regional perspectives were brought together and harmonized.

11. As clarified by decision VII/12, the principles are intended to be of general relevance, although not all principles apply in the same manner to all situations, nor do they apply with equal rigour. Application of the principles varies according to the biodiversity being used, the conditions under which they are being used, and the institutional and cultural context in which the use is taking place. The practical principles in most instances apply to both consumptive and non-consumptive uses of biodiversity components. They take into account requirements related to:

(a) Policies, laws, and regulations;

(b) Management of biological diversity;

(c) Socio-economic conditions; and

(d) Information, research and education.

12. The rationales for each principle are based on the fact that in most instances, the sustainable use of biodiversity components, and especially of agricultural biodiversity, provides incentives for its conservation due to the social, cultural and economic benefits which people draw from from the use. Conservation and sustainable use, the first two objectives of the Convention are mutually reinforcing. In this context, the application of the Addis Ababa Principles and Guidelines should be set in the context of the Ecosystem Approach, as endorsed at the Conference of the Parties to the Convention on Biological Diversity at its seventh meeting.

Application of the Addis Ababa Principles and Guidelines for the Sustainable Use of Biodiversity, in particular to agricultural biodiversity

13. As explained above, the Addis Ababa Principles and Guidelines are of general relevance, although not all principles will apply equally to all situations, nor will they apply with equal rigour. Application of the Principles will vary according to the biodiversity being used, the conditions under which they are being used, and the institutional and cultural context in which the use is taking place. The application of these Principles should be in the context of the ecosystem approach, as endorsed at the Conference of the Parties to the Convention on Biological Diversity in Kuala Lumpur in February 2004.

14. Numerous examples are available of situations when development objectives are pursued by activities that fail to give due consideration to their impact on environmental assets and on biodiversity in particular. Such activities led in many cases not only to environmental degradation and a loss in biodiversity, but, in the long run, also proved to be ineffective in reaching their development objectives. Hence, these examples also point to the crucial importance of Millennium Development Goal (MDG) 7 and, specifically, the objectives of biodiversity conservation and sustainable use of the Convention is achieving the MDGs. As noted further in the note by the Executive Secretary on relevance of the Convention to the MDGs and to the United Nations Secretary-General's Water, Energy, Health, Agriculture and Biodiversity (WEHAB) Initiative (UNEP/CBD/COP/7/20/Add.1), in principle the Convention and MDGs are mutually reinforcing.

15. Example of activities leading to adverse effects on agricultural biodiversity and/or long-term development objectives, as noted in the information note by the Executive Secretary analysing the linkages between the programmes of work of the Convention and the Millennium Development Goals prepared for the seventh meeting of the Conference of the Parties to the Convention (UNEP/CBD/COP/7/INF/23) include:

(a) Expansion of agriculture decreases natural ecosystems and the monetary and non-monetary benefits derived from the goods and services natural ecosystems provide;

(b) Agricultural intensification can damage agricultural biodiversity and surrounding ecosystems, with detrimental impacts on the monetary and non-monetary benefits derived from the goods and services natural ecosystems provide ;

(c) Unsustainable water consumption for irrigation can jeopardize, in the long term, economic and social development objectives such as increasing agricultural production and improving human health;

(d) Soil erosion, pollution (pesticides, fungicides and herbicides) can negatively impact on agricultural productivity ;

(e) Perverse incentives may fail to take into account the existence of environmental externalities on agricultural systems;

(f) Improved affluence may increase demand for products;

(g) Agricultural intensification and dependency on commercial seed producers leads to erosion of traditional knowledge, practices and innovations;

(h) Reliance on narrowing number of crops and changing diets.

The programme of work on agricultural biodiversity under the Convention on Biological Diversity

16. The initial programme of work on agricultural biological diversity under the Convention on Biological Diversity was adopted in decision III/11 during the third meeting of the Conference of the Parties held in Buenos Aires. The programme of work was further elaborated in decision V/5. The programme focuses on: (i) impacts of biodiversity of agriculture; and (ii) impacts of agriculture on biodiversity. The specific objectives of the programme are:

(a) To promote the positive effects and mitigate the negative impacts of agricultural systems and practices on biological diversity and their interface with other ecosystems;

(b) To promote the conservation and sustainable use of genetic resources of actual and potential value for food and agriculture; and

(c) To promote the fair equitable sharing of benefits arising out of the use of genetic resources.

17. The programme of work is built on four programme elements, each with a specific operational objective:

(a) Assessments – to provide a comprehensive analysis of status and trends of the world's agricultural biodiversity and their underlying causes as well as local knowledge of its management;

(b) Adaptive management - to identify management practices, technologies and policies that promote the positive and mitigate the negative impacts of agriculture on biodiversity, and enhance productivity and capacity to sustain livelihoods by expanding knowledge, understanding and awareness of the multiple goods and services provided by the different levels and functions of agricultural biodiversity;

(c) Capacity building – to strengthen the capacities of farmers, indigenous and local communities, and their organizations and other stakeholders, to manage sustainably agricultural biodiversity so as to increase their benefits, and to promote awareness and responsible action; and

(d) Mainstreaming - to support the development of national plans and strategies for the conservation and sustainable use of agricultural biodiversity and to promote their mainstreaming and integration in sectoral and cross-sectoral plans and programmes.

18. The Convention's agricultural biodiversity work programme focuses on assessing the status and trends of the world's agricultural biodiversity and of their underlying causes, as well as of local knowledge of its management. It also pays attention at identifying and promoting adaptive-management practices, technologies, policies and incentives. In addition, it promotes the conservation and sustainable use of genetic resources that are of actual or potential value for food and agriculture. The work

programme identifies policy issues that governments can consider when addressing such matters while considering various ways and means to improve the capacity of stakeholders and promote the mainstreaming and integration in sectoral and cross-sectoral plans and programmes at all levels.

19. The Secretariat of the Convention conducted an examination of the obstacles to the implementation of the programme of work on agricultural biodiversity as noted in an analysis from the third national reports on the implementation of the Convention, which can be found in annex I below.

20. An associated overview, following a reading under three different headings; (i) policy-related measures; (ii) support/service related measures; and (iii) management-related measures; was conducted on the situation in selected African countries Parties to the Convention and in most instances represented by experts in the African Regional Workshop on Sustainable Use of Biodiversity as to the implementation of specific sustainable use of agricultural biodiversity. Selected information, gathered from submitted third national reports is compiled in annex II below. Regarding the 2010 target, the framework for monitoring implementation of the achievement of the 2010 target into thematic programmes of work is provided in annex III below. This may be of particularly relevance to discussion on or development of specific targets associated to the programme of work on agricultural biodiversity as per the outcome-oriented indicators to measure progress towards the 2010 target described in annex II to decision VIII/15. Among others, target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained.

21. In the context of decision VII/30 in which the Conference of the Parties decided to establish goals and sub-targets for each of the identified focal areas to clarify the 2010 global biodiversity target and promote coherence among the programmes of work of the Convention, this set of possible indicators would respond to target 4 “Promote sustainable use and consumption” and sub-target 4.1: “Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity”.

Ecosystem services assessment and adaptive management

22. Conservation of biodiversity is essential as a source of particular biological resources, to maintain different ecosystem services including genetic resources, to maintain the resilience of ecosystems, and to provide options for the future. The benefits that biodiversity provides to people have not been well reflected in decision-making and resource management and, thus, the current rate of biodiversity loss is higher than what it would be, had these benefits been taken into account.

23. Tools exist for an assessment of the consequences of biodiversity loss for human well-being, but most decisions continue to be made in the absence of a detailed analysis of the full costs, risks and benefits. Various valuation methods are available to estimate the different biodiversity values and their changes under different policy or management alternatives. Despite the existence of these tools, only provisioning ecosystem services are routinely valued.

24. In assessing the consequences of biodiversity loss for human well-being, one needs to consider the following issues, *inter alia*: (i) the impacts of sustainable use and non-sustainable use on livelihoods, and ecosystems good and services; (ii) socio-economic factors that influence pattern and intensity of use of biological resources; and (iii) economic and social values of goods and services provided by ecosystems.

IV. PROPOSED OUTPUT FROM THE WORKSHOP

25. Indicators for sustainable use in agricultural biodiversity, as a contribution to facilitating the achievement of the 2010 target, sustainable development and poverty alleviation may be developed through the principles found in the Addis Ababa Principles and Guidelines and their alignment with possible action oriented output such as policy related ones that could include, *inter alia*; the provision of appropriate legal and policy frameworks; the delegation of responsibility and accountability to appropriate stakeholders; the removal of perverse incentives; the better linkage of jurisdictional authority

to scale of use and when appropriate and needed, the promotion of international cooperation and the internalization of management costs.

26. There is a recognized lack of broadly accepted indicators of agricultural biodiversity. The further development and application of such indicators, as well as assessment methodologies, are indispensable to permit an analysis of the status and trends of agricultural biodiversity and of its range of components that would facilitate the recognition of sustainable agricultural practices in respect of biodiversity.

27. Other action-oriented outputs that are support or services oriented could include, *inter alia*; the promotion and support of interdisciplinary research, proper systems for economic valuation as well as the promotion of education and awareness raising activities on sustainable use. A third category of action oriented outputs are management related and may include, *inter alia*, the use of adaptive management techniques, the minimization of impacts on ecosystem, the adoption of an interdisciplinary approach, the minimization of waste or the distribution of benefits equitably.

28. Reflecting on indicators for sustainable use in agricultural biodiversity may be complemented by considering the different targets of the framework for monitoring implementation of the achievement of the 2010 target into thematic programmes of work of the Convention, and especially as applied to agricultural biodiversity as described in annex II to decision VIII/15.

29. Inter-sectoral cooperation and decentralization of management to the lowest appropriate level, gender-sensitive and equitable distribution of benefits, as well as the use of adaptive management tools and policies to deal with uncertainties as modified in the light of experience and changing conditions are activities which are inclusive of major players and of key societal stakeholders as for the sustainable management of biological diversity. This sustainable management must include all appropriate socio-economic actors. Involvement of all actors in the management of agricultural biodiversity, and how each of them can use the Addis Ababa Principles and Guidelines as well as other implementation tools developed under the Convention as deemed relevant to the sustainable use of agricultural biodiversity is essential when one aims at achieving progress in ensuring the sustainable use of these resources.

30. Among the institutional actors concerned, the following organizations have adopted comprehensive reviews of relevance to the sustainable use of agricultural biodiversity: the Food and Agriculture Organization of the United Nations (FAO), the International Federation of Agricultural Producers (IFAP), various agricultural centres attached to the Consultative Group on International Agricultural Research (CGIAR), such as the World Agroforestry Centre (ICRAF), the International Plant Genetic Resources Institute (IPGRI) and the International Livestock Research Institute (ILRI), as well as the United Nations Environment Programme's Regional Office for Africa (UNEP-ROA) and other regional and international organizations involved on the agriculture and biodiversity nexus.

31. Countries of the African continent must be supported by an extensive platform of partners, both at the local, regional and international level to address effectively the important challenges ahead. The sustainable use of agricultural diversity in the region comprises action by all agricultural subsectors with a long-term horizon and sustained support coupled to the mobilization of the epistemic community.

32. The Workshop is to place a special focus on the applicability of the Addis Ababa Principles and Guidelines to agricultural biodiversity and to the impacts of agricultural practices on biodiversity in Africa. A special focus should be made in this context on particular domesticated species, breeds, varieties and genetic resources in order to propose elements of discussion in relation to general guidelines on the sustainable use of agricultural biodiversity, and as a contribution to the SBSTTA in-depth review of the agricultural biodiversity programme of work under the Convention (decision VII/12, paragraph 3).

33. The Workshop should be supportive of, and feed into, African and international processes already in course on these topics. Many initiatives, assessments and significant programs are in place to address

the need for a uniquely African "green revolution" or, as Secretary General Kofi Annan phrased it, "a number of rainbow evolutions". 2/

34. Addressing poverty alleviation and the eradication of hunger through an increase of agricultural productivity in the respect of African traditional knowledge in a way that defends Africa's agricultural biodiversity and avoids the risks and environmental deterioration often associated with unsustainable industrial agriculture should be the objective of all strategies developed to address challenges faced by unsustainable use of agricultural resources and related ecosystems.

2/ United Nations (2004), "Secretary General Calls for 'Uniquely African Green Revolution' in 21st Century to end Continent's Plague of Hunger" , United Nations Press Release, 6 July 2004, SG/SM/9405/AFR/988.

Annex I

OVERVIEW OF OBSTACLES TO IMPLEMENTATION OF THE PROGRAMME OF WORK ON AGRICULTURAL BIODIVERSITY AS IDENTIFIED IN THE THIRD NATIONAL REPORTS

Parties were asked, in their third national reports to: "elaborate on the implementation of the agricultural biodiversity programme of work and associated decisions specifically focusing on […] constraints encountered in implementation". 3/. A review of the third national reports revealed the following main obstacles to implementation of the programme of work.

The most commonly identified constraints include the lack of adequate financial resources, poor collaboration and knowledge sharing and the lack of political will to implement the programme of work. Other constraints can be classified as (i) lack of adequate assessments, (ii) capacity constraints, (iii) inadequate mainstreaming, and (iv) other constraints.

(i) Lack of adequate assessments

The lack of comprehensive assessments was identified as an obstacle to implementation. Obstacles to the development of assessments include:

(a) Lack of national programmes for assessment;

(b) Lack of economic assessments of the goods and services agricultural biodiversity;

(c) Lack of good and widely used agro-environmental indicators; and

(d) Lack of coordinated monitoring of status and trends of agricultural biodiversity.

(ii) Capacity constraints

Capacity constraints include:

(a) Lack of institutional and technical capacity;

(b) Inadequacies in policy, legal and regulatory frameworks;

(c) Lack of recognition in politics of the role and contributions of local agricultural practices in conservation of biodiversity; and

(d) Lack of coordination amongst responsible agencies.

(iii) Inadequate mainstreaming

Mainstreaming of the links between agriculture and biodiversity conservation was identified as an important component of the successful implementation of the programme of work. Identified obstacles to mainstreaming include:

(a) Lack of synergy between the legislation on plant protection products, the seeds legislation and the legislation on genetically modified organisms;

(b) Lack of a long term vision within government agencies;

(c) Slow progress in implementation of policies; and

(d) Difficulties in integrating policies across different agricultural sectors.

3/ Box LXVI of the third national reports.

(iv) Other constraints

Parties also identified a number of additional encountered during the implementation of the programme of work on agricultural biodiversity. These include:

(a) Illegal cropping

(b) Lack of effective national regime on access and benefit-sharing in conservation with potential for food and agriculture;

(c) Lack of incentives for stakeholders (farmers, communities, community based organizations and the private sector);

(d) Limited access to environmentally sound technology;

(e) Difficulties in transfer of technology, experience and knowledge;

(f) Lack of consideration of traditional knowledge.

Annex II

OVERVIEW OF ACTIVITIES UNDERTAKEN BY SELECTED PARTIES TO THE CONVENTION ON BIOLOGICAL DIVERSITY AS TO THE SUSTAINABLE USE OF AGRICULTURAL BIODIVERSITY

The present annex provides an overview of activities undertaken by selected Parties to the Convention on Biological Diversity as to the sustainable use of agricultural biodiversity and were taken from the third national reports under the Convention of these eleven Parties.

Building on the methodology and format used for the second national reports, the format for the third national reports includes questions on strategic objectives and goals established and focus on allowing the Parties to provide information on the experience of implementing their national biodiversity strategies and action plans, and was created with the aim of facilitating the identification of obstacles and impediments to implementation of the Convention.

The summary found below is built from a separation of the Addis Ababa Principles and Guidelines into three parts covering the range of principles listed.

(a) Part A, on policy-related measures, covers Practical Principles 1, 2, 3, 7, 8 and 13;

(b) Part B, on support or services oriented measures, covers Practical Principles 6, 10 and 14;

(c) Part C, on management-related measures, covers Practical Guidelines 4, 5, 9, 11, 12.

Countries for which national reports have been reviewed in this context are: Cameroon, Côte d'Ivoire, Egypt, Ethiopia, Kenya, Mali, Morocco, Niger, Togo, Uganda and Zimbabwe. 4/

A. Selected policy-related measures

Cameroon implemented a policy on manure, to increase soil biodiversity and to establish an Action Plan for the development of the manure sector. The country's rural development strategy integrates all aspects of soil biodiversity and agricultural biodiversity.

Egypt implemented a national program on wheat, and a national plan for environmental action on integrated pest management, organic farming, conservation and maintenance of soil biodiversity, on genetic improvements of crops, and on implementation of policies on sustainability and development of agricultural biodiversity.

Ethiopia's Rural Development Policy underlines the need to base animal genetic resources development efforts on indigenous animals and associated indigenous knowledge. National policies from Ethiopia on biodiversity conservation and research: allows the government to ensure the integration of biodiversity conservation and sustainable use of agricultural biodiversity is rooted into the educational system and that appropriate awareness measures are undertaken for the sensitization of policy makers and the public on general biodiversity issues. This Ethiopian policy is meant to be integrated and supported by policies and strategies on the national economy, agriculture, industry, health, education, population and urbanization, energy and construction, resource management and environmental protection. Based on African Model Law, Ethiopia implemented a proclamation to provide access to genetic resources and community rights that is consistent with the Convention. Ethiopia further incorporated biodiversity related issues into its Environmental Impact Assessment (EIA) proclamation, and into its sectoral guidelines, which are in line with decision VI/7.

4/ National reports are available at: http://www.biodiv.org/world/map.aspx.

Kenya's strategy for revitalizing agriculture recognizes the importance of conservation and sustainable use of agricultural biodiversity and the protection of rare and endangered species. On this matter, Kenya implemented a National Food Policy and an Environment Management and Coordination Act.

Mali implemented a programme for the conservation of local varieties of threatened crop plant and farm animals. This programme is meant to collect data and conserve local varieties of cultivated crops and should constitute a network of seed farmers capable of conserving these local varieties such as sorghum or voandzou rice. Mali will also implement a Genebank organized under bioclimatic zones and that will collect data and conserve local farm animals threatened or of interest to agriculture.

In *Uganda* a national policy on conservation and sustainable use of Plant genetic resources for food and agriculture is under preparation and should be followed by legislation. Ugandans farmers' rights over their plant genetic resources and associated knowledge are recognized and protected by law. Genetic resources that remain in the wild are protected as part of the national Protected Area System.

Zimbabwe does not have a national agro-biodiversity strategy, but research and monitoring in a number of agro-biodiversity rich areas are underway. Such activities include studies in indigenous genetic resources important in agriculture, documentation of indigenous knowledge systems, multiplication and regenerating plant genetic resources, characterization and evaluation plant genetic resources, characterisation and evaluation animal genetic resources, undertaking on-farm / in situ research and on-farm conservation.

Many Parties reported on cooperation at an international level with, inter alia, the International Livestock Research Institute (ILRI), the World Agroforestry Centre (ICRAF), the Institut International d'Agriculture Tropicale (IIAT), or the New Partnership for Africa's Development (NEPAD).

B. Selected support/services related measures

Cameroon implemented the National Project for Extension and Agricultural Training which sensitizes farmers to the close interactions between agricultural practices and conservation of biodiversity. The government collaborates with Heifer International a non-profit charitable organization based in the United States so as to providing an education programme on sustainable farm animal production to farmers. The Investment Fund for Agricultural and Community Micro-Enterprises finances projects presented by both men's and women's groups. In Cameroon's North West province, a government based organisation has been implementing a project to improve agricultural production in the province.

Ethiopia trained more than 3,500 farmers, of which 16% of trainees were women, for the implementation of a project entitled "A dynamic approach to the conservation of Ethiopia's plant genetic resources". In addition, Ethiopia reports in the training of agents and extension workers on crop conservation association bylaws, on importance of in situ conservation, on use values of traditional knowledge for in situ conservation. Training also concerns traditional diseases and pest control practices and their application for in situ conservation and covers a wide range of issues: biological soil and water conservation practices, enhancement of farmer's varieties, women's role on in situ conservation, development of local seed supply systems.

Kenya provided support to various organizations and institutions so as for research institutes, local universities and NGOs to undertake assessments on local livestock breeds. This allows various organizations to promote the production, conservation and sustainable use of indigenous food crops. Kenya reported that it had a well-developed agricultural research network that covers all ecological zones and covers fisheries, forests and wildlife biodiversity.

Mali developed a partnership between the Unity of Genetic Resources of the Rural Economy Institute and indigenous and local communities for the conservation of local crop varieties.

In *Morocco*, subsidies and lease of taxes are provided to farmers to ameliorate their livelihoods and increase food security of the country and special department in government has been created to provide support to farmers in the management of natural resources.

C. Selected management-related measures

Cameroon collaborates with the FAO on an information system for domestic animals and on an assessment of traditional agricultural knowledge. The associated programme has assessed traditional agricultural practices and traditional harvest conservation. Cameroon reported an overall degradation of agricultural biodiversity due to genetic erosion. However, the use of improved varieties with the use of manure had led to reduction of negative impacts of itinerant agriculture and reduction of degradation of pasture. Conservation in situ is reported for wild species in protected areas. Botanical and zoological gardens provide *ex situ* conservation of cattle varieties in the Lake Chad region.

In *Côte d'Ivoire* an assessment of forest cover in 1992 demonstrated a reduction of forested areas suitable for coffee and cocoa plantations. However, a reduction of this degradation is observable since 1996 due to the appropriate management and protection of forest and to the reduction of forest fires coming from public sensitization programmes.

In *Egypt*, adaptive management programmes in place include; land terracing, conservation tillage and mulching, crop rotation and mixed cropping.

Ethiopia developed agreements on access to, and sharing benefit sharing with international corporations. In the form of bilateral agreements the aim is for local communities to benefit through the creation of a market for their products. This is essential for an equitable distribution of benefits. Ethiopia reported that the rich agro-biodiversity of the country is effectively conserved through a mix of in situ and ex situ programs. To overcome the vulnerability of the local seed systems and recover the crop genetic resources that have suffered erosion, a number of restoration activities have been carried out in several parts of the country. Two major activities were carried out to enhance the opportunities of farmers to contribute to the restoration of their lost varieties.

Kenya is developing a database on agricultural knowledge, innovations and practices stemming from farmers. Although Kenya is not considered a centre of origin, endemic species such as the Maasai Red Sheep, the Hirola, Sable and Roan antelopes that have potential for development as alternative livestock are being promoted on-farm and conserved *in situ* and *ex situ*.

Morocco has listed plant and animal diversity and highlighted their importance, especially for wild crop relatives and indigenous farm animals. Assessment of traditional use of medicinal and aromatic plants has been undertaken. An institute of medicinal plants has been created to study these plants. Management practices, such as seed conservation in Genebank demonstrated positive impacts on biodiversity and on the protection of endangered species. Reforestation is undertaken in palm oasis by giving palm trees to farmers to stop palm plantation degradation.

In *Uganda*, an assessment on plant genetic resources (finger millet, pigeon peas, sorghum, and vegetables and wild relatives) and farm animal genetic resources (chicken and goats) was undertaken, as well as local farmers' innovations and practices and their contribution to farm productivity and diversity. Overall degradation of genetic resources has been assessed and management practices refocused accordingly on halting land degradation, intensification of agriculture, growing of high value crops and livestock, intercropping, mixed farming and agroforestry practices. These have been aimed at reducing the need for agricultural land expansion (producing more, using less land) and diversification of produce, or increasing profits through specialization.

Zimbabwe's Department of Agricultural Research conducts assessments on Indigenous Knowledge Systems and practices relating to agro-biodiversity. In recent years, due to the high cost of living, the high cost of agricultural inputs and increased droughts, there has been a shift away from

hybrids to small grains which do well in marginal areas and which were ignored in the past. The national review of prices also set competitive prices for these formerly marginal crops. Zimbabwe reported that it relaxed regulations to allow the use of Open Pollinated Maize Varieties in rural areas. These are less productive than hybrids, but they are less costly and easier to manage in a communal small holder farming system such as that found in many regions of Zimbabwe.

Annex III

APPLICATION OF THE PROVISIONAL FRAMEWORK OF GOALS AND TARGETS FOR ACHIEVING THE 2010 TARGET TO THE THEMATIC PROGRAMME OF WORK ON AGRICULTURAL BIODIVERSITY

The following list of provisional goals and targets as per the framework agreed upon at the eighth meeting of the Conference of the Parties to the Convention on Biological Diversity through decision VIII/15 (annex II) may be of particularly relevance to discussion on or development of specific targets associated to the programme of work on agricultural biodiversity.

- Target 3.1: Genetic diversity of crops, livestock, and of harvested species of trees, fish and wildlife and other valuable species conserved, and associated indigenous and local knowledge maintained.
- Target 4.1: Biodiversity-based products derived from sources that are sustainably managed, and production areas managed consistent with the conservation of biodiversity.
- Target 4.2 Unsustainable consumption, of biological resources, or that impacts upon biodiversity, reduced.
- Target 7.1: Maintain and enhance resilience of the components of biodiversity to adapt to climate change.
- Target 8.1: Capacity of ecosystems to deliver goods and services maintained.
- Target 8.2: Biological resources that support sustainable livelihoods, local food security and health care, especially of poor people, maintained.
- Target 9.1. Protect traditional knowledge, innovations and practices.
- Target 9.2: Protect the rights of indigenous and local communities over their traditional knowledge, innovations and practices, including their rights to benefit-sharing.
- Target 10.1: All access to genetic resources is in line with the Convention on Biological Diversity and its relevant provision
- Target 10.2: Benefits arising from the commercial and other utilization of genetic resources shared in a fair and equitable way with countries providing such resources in line with the Convention on Biological Diversity and its relevant provisions.
