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BIOLOGICAL DIVERSITY OF DRYLAND, MEDITERRANEAN, ARID, SEMI-ARID, GRASSLAND AND SAVANNAH ECOSYSTEMS: OPTIONS FOR THE DEVELOPMENT OF A PROGRAMME OF WORK

Note by the Executive Secretary

EXECUTIVE SUMMARY

The present note has been prepared in response to the request by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), as contained in its recommendation IV/3, for the Executive Secretary to prepare a draft programme of work on biological diversity of dryland, Mediterranean, arid, semi-arid, grassland and savannah ecosystems for the consideration of the Subsidiary Body at its fifth meeting. In line with recommendation IV/3, the note and the draft programme have been prepared in consultation with the Secretariat of the Convention to Combat Desertification. The note outlines the environment types that might be considered and, as requested, two alternatives for short names are suggested: "dryland biodiversity" or "biodiversity of dry and sub-humid lands". In the interests of brevity, the term "dryland biodiversity" is used in the report without prejudice to the name eventually recommended by SBSTTA and selected by the Conference of the Parties. The note further outlines: the particular significance and value of dryland biodiversity and the main threats to it; ongoing work of existing programmes; and possible synergies with other conventions and thematic areas of the Convention on Biological Diversity.

Two clusters of elements are proposed to provide a framework for a flexible and demand-driven programme:

(a) Assessments: to assemble and analyse information on the state of dryland biodiversity and the pressures on it, to disseminate existing knowledge and best practices, and to fill knowledge gaps, in order to define responses needed; and

(b) Targeted actions in response to identified needs to promote the conservation and sustainable use of biodiversity in drylands, and to combat

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biodiversity loss in drylands and its socio-economic consequences, including through:

(i) Promotion of specific measures for the conservation of dryland biodiversity;

(ii) Promotion of responsible resource management, within ecological principles, at appropriate levels, through an enabling policy environment;

(iii) Support for sustainable livelihoods.

The activities would be carried out through: consolidation of information from various existing sources; targeted research; case-studies on management practices; capacity-building and investments in the development of sustainable livelihoods and conservation measures; improved consultation, coordination and information-sharing within countries; and partnerships between relevant international organizations and programmes.

SUGGESTED RECOMMENDATIONS

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

1. Decides to establish a programme of work on the biological diversity of arid and sub-humid lands including grassland, savannah, and Mediterranean lands, which may also be known as the programme on "dryland biodiversity";

2. Endorse a first phase of the programme of work, to be contained in an annex to its sdecision;*

3. Urges Parties, countries, international and regional organizations, major groups and other relevant bodies to collaborate in carrying out the programme of work;

4. Calls upon the Global Environment Facility to provide financial support, in accordance with Article 21 of the Convention, for activities and capacity-building for the implementation of the programme of work;

5. Requests the Subsidiary Body on Scientific, Technical and Technological Advice to review and assess periodically (initially after two years, thereafter every four years) the status and trends of dryland biodiversity on the basis of the outputs of the activities of the programme of work, and to make recommendations for the further elaboration of the programme of work, as appropriate; and

6. Requests the Executive Secretary to collaborate fully with the Secretariat of the Convention to Combat Desertification, and with other

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* The programme of work would be based on section III of the present note and forwarded to the Conference of the Parties as an annex to the recommendation that the Subsidiary Body might make on the draft programme.

relevant bodies, in the implementation and further elaboration of the programme of work.

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I. INTRODUCTION

1. At its fourth meeting, held in Bratislava in 1998, the Conference of Parties to the Convention on Biological Diversity decided, through decision IV/16, to consider in depth at its fifth meeting the biological diversity of dryland, Mediterranean, arid, semi-arid, grassland and savannah ecosystems. Subsequently, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), at its fourth meeting, recommended that the Conference of the Parties consider adopting a programme of work on this thematic area and providing guidance to the financial mechanism regarding the financing of such a programme of work.

2. In its recommendation IV/3, SBSTTA therefore requested the Secretariat to prepare a draft programme of work, in consultation with the Secretariat of the Convention to Combat Desertification, and to present it to SBSTTA at its fifth meeting. Other relevant conventions, organizations and international programmes were invited to support the elaboration of the programme of work. SBSTTA specified that the draft programme should be based on the ecosystem approach, taking due account of the three objectives of the Convention, and be demand-driven and flexible. It should also identify synergies, gaps and overlaps within the current programmes of the Convention and integrate a number of issues. 1/ A reporting framework should also be prepared. SBSSTA also requested the Secretariat to propose a shorter compound name for the programme of work.

3. In furtherance of these requests, the Secretariat convened a meeting of a liaison group of experts drawn from the following international organizations: the Food and Agriculture Organization of the United Nations (FAO), the secretariat of the Global Environment Facility (GEF), the United Nations Environment Programme (UNEP), the International Centre for Agricultural Research in Dry Areas (ICARDA), the International Centre for Research in the Semi-Arid Tropics (ICRISAT), and the World Conservation Monitoring Centre (WCMC). The liaison group reviewed the scope of the proposed programme of work, suggested options for a short name, reviewed the status and trends of dryland biological diversity and the relevant existing activities of various organizations, and developed possible elements for a programme of work. The liaison group drew upon the assessment of the status and trends already considered by SBSTTA (UNEP/CBD/SBSTTA/4/7), as well as a background study paper commissioned by UNEP.

1/ These were: (i) fires, land-use management such as grazing and inappropriate land conversion, soil degradation, desertification, impact of agriculture, invasive species, water management, inclusive of all activities that have an impact on the ecosystems; (ii) in situ conservation (including protected areas and threatened species), ex situ conservation, as well as restoration or rehabilitation of ecosystems; (iii) socio-economic and cultural aspects, including the needs of indigenous people and local communities, and incentives and economic valuation; (iv) knowledge, innovations and practices of indigenous and local communities, in accordance with Article 8(j) and other related provisions of the Convention; (v) capacity-building, particularly in developing countries, including for inventories, evaluations and monitoring; (vi) identification of the most threatened components of these ecosystems (including species); and (vii) sustainable use of the components of these ecosystems, including wildlife utilization, bioprospecting, benefit-sharing and sustainable tourism; (viii) taxonomic requirements; (ix) education, training and public awareness; and (x) exchange of relevant information.

4. On the basis of the work of the liaison group, the Secretariat prepared a preliminary draft programme of work for further consultation with Secretariat of the Convention to Combat Desertification, and the present document was subsequently finalized by the Secretariat, taking into account comments received from the aforementioned organizations.

II. SCOPE OF DRYLAND BIODIVERSITY, ITS IMPORTANCE, STATUS AND TRENDS, AND A BRIEF SURVEY OF ONGOING ACTIVITIES

5. The programme of work would apply to the following six environment types (although emphasis might be placed on certain types during the first phase of the programme):

(a) Hyper-arid ecosystems: areas that have a precipitation/potential evapotranspiration (P/PET) ratio of less than 0.05;

(b) Arid ecosystems: areas where the P/PET ratio is between 0.05 and 0.20;

(c) Semi-arid ecosytems: areas with a P/PET ratio between 0.20 and 0.50;

(d) Mediterranean ecosystems: 2/ no single climatic or bioclimatic definition of these areas has been developed. They generally refer to areas with cool, wet winters and warm or hot summers. The Mediterranean ecosystems comprise of a wide range of habitat types, including forest, woodland and grassland that are typically characterized by low, woody, fire-adapted sclerophyllous scrubland (maquis, chaparral, fynbos, mallee);

(e) Savannah ecosystems: areas dominated by a ground layer of grasses and grass-like plants. They form a continuum from treeless plains through open woodlands to closed-canopy woodland with a grassy understory;

(f) Other grassland ecosystems: loosely defined as areas dominated by grasses (members of the family Gramineae excluding bamboos) or grass-like plants with few woody plants. They occur mostly in drylands.

6. The first three of these ecosystem types are usually characterized using agro-climatic criteria (such as the P/PET ratio), while the others are usually characterized on the basis of major vegetation types. Nonetheless, in all cases, water stress, at least during part of the year, is a defining characteristic. The environment types were described in more detail in the above-mentioned assessment of the status and trends submitted to SBSTTA at its fourth meeting (UNEP/CBD/SBSTTA/4/7). Work on types (b) and (c) and parts of types (d) (e) and (f) is also addressed under the Convention to Combat Desertification.

7. It is suggested that the short name of the proposed work programme should be easy to understand to non-specialists, and that it need not necessarily include specific reference to all of the habitat types, which would, however, be spelt out in the programme itself. Two alternatives are proposed for further consideration: "dryland biodiversity" and "biodiversity of dry and sub-humid lands". In the interests of brevity, the term "dryland biodiversity" is used in the remainder of the present note, without prejudice to the name eventually recommended by SBSTTA and selected by Conference of the Parties.

2/ These include areas in Australia, California, Chile and South Africa, as well as the Mediterranean basin.

8. Biological diversity of drylands is of particular significance and value for several reasons:

(a) The areas in question include many unique biomes, some of which have high species richness and endemism. Within the Mediterranean type, for example, the fynbos of southern Africa contains a very high level of diversity of plant species;

(b) In the other dryland habitats, although total species richness is rather low compared to areas such as tropical forests, it may be very high at small spatial scales. Indeed, at these scales, grasslands are the most species-rich habitats on Earth;

(c) Particular sites within drylands are often of global importance for biological diversity, out of proportion to their physical extent. Wetland areas in drylands, for instance, are often of crucial importance in supporting migratory bird species, as well as more local species;

(d) The world's most important domesticated food crops and livestock originated in drylands. The nutrient stores of the grains of cereals and many legumes evolved to deal with the marked seasons of these environments. Genetic diversity of these species, and of their wild relatives, is very important;

(e) The livelihoods of present agricultural and pastoral communities continue to depend closely on this biological diversity. Hence, its conservation and sustainable use is central to livelihood development and poverty alleviation;

(f) Drylands include many fragile environments that may warrant priority attention to avoid irreversible loss of biological diversity, and consequent negative impacts on livelihoods.

9. The main pressures that impact on dryland biodiversity are:

(a) Habitat conversion. The most common transformation is conversion to cropland. Inappropriate conversion or poor soil and water management can lead to degradation. In Mediterranean areas, in particular, conversion for transport, tourism and industrial infrastructure is also very significant;

(b) Grazing pressures. Wildlife and livestock impact on dryland biodiversity through trampling and removal of biomass, alteration of species composition through selective consumption and changed inter-plant competition, and redistribution of nutrients through dropping of urine and faeces. Changes in grazing intensity and selectivity will inevitably change dryland biodiversity; undergrazing and overgrazing can both have negative effects, but overgrazing by livestock is increasingly problematic;

(c) Introduced species, varieties and breeds, which can radically change dryland biodiversity. Replacement of traditionally grown crops (such as millet and sorghum) by others (such as maize), and the introduction of improved crop varieties, can diminish crop-species and genetic diversity, and limit crop evolution. The introduction of exotic grasses and legumes in pastures and rangelands is particularly significant in this regard. Invasive alien plant and animal species can adversely affect indigenous biodiversity. Introduced feral animals, such as rabbits, can contribute to overgrazing;

(d) Changes in fire regimes. Fire occurs naturally in many drylands, but increased frequency or intensity of fire through deliberate or accidental human action can markedly change species composition and often decrease biodiversity;

(e) Water. Since water is a limiting factor in drylands, changes in water availability, through water abstraction or irrigation can have disproportionate effects on biodiversity;

(f) Soil management. Dryland soils are particularly prone to erosion, especially when natural vegetation is removed through inappropriate tillage, grazing or use of fire. Excessive use of artificial fertilizers can change the biotic composition of soils;

(g) Over-harvesting. Excessive collection of fuelwood, over-harvesting of plants and over-hunting of wildlife can all have direct negative impacts on the components of dryland biodiversity; and

(h) Climate change. Long-term changes in temperature and rainfall patterns can have serious impacts on biological diversity of drylands.

10. As evidenced by the prevalence of fire and grazing, dryland ecosystems are often non-equilibrium systems. This poses difficulties in undertaking the necessary assessments of the status and trends of dryland biodiversity, and its management. Management is further complicated because of the competing use of resources by several communities and sectors. Sometimes movement of both wild-animal populations and livestock occurs across national boundaries. Action to promote the conservation and sustainable use of dryland biodiversity will therefore necessarily have to deal with these changing complex situations through the use of adaptive management processes, community and transboundary management, and conflict resolution. There is a clear need for greater knowledge and understanding of dryland biodiversity and the factors affecting its conservation and use, but some action will be necessary even without complete information.

11. A wide range of activities relevant to the conservation and sustainable use of dryland biodiversity are already ongoing. Activities of international organizations are summarized in annex I below. Potential overlaps and synergies with other conventions and with other thematic areas under the Convention are listed in annexes II and III, respectively. As emphasized in the next section of the present note, the programme of work would be elaborated so as to avoid unnecessary duplication and promote synergies between existing programmes. The Secretariat has memoranda of cooperation with other relevant bodies, including the Secretariat of the Convention to Combat Desertification.

12. Based on the above, the following programme of work is proposed for consideration by the Subsidiary Body on Scientific, Technical and Technological Advice.

III. DRAFT PROGRAMME OF WORK

A. Title

13. The formal title of this thematic area shall be: "Biological diversity of arid and sub-humid lands, including grasslands, savannahs, and Mediterranean lands", and the short title shall be "Dryland biodiversity".

B. Overall objectives, approach and guiding principles

14. The overall aim of the programme of work is to promote the three objectives of the Convention in the thematic area of dryland biodiversity.

15. The elaboration and implementation of the programme of work shall bear in mind the need:

(a) To build upon existing knowledge and ongoing activities. The programme will promote a concerted response to fill knowledge gaps while supporting best management practices through partnership among countries and institutions;

(b) To ensure harmony with the other relevant thematic programmes of work under the Convention, as well as the work on cross-cutting issues;

(c) To promote synergy and coordination, and to avoid unnecessary duplication between relevant conventions, particularly the Convention to Combat Desertification, and the 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;

(d) To promote effective stakeholder participation;

(e) To respond to national priorities. Hence, implementation of specific activities should be flexible and demand-driven; and

(f) To support the development of national strategies, programmes and to promote the integration of biodiversity concerns in sectoral and cross-sectoral plans, programmes and policies, in furtherance of Article 6 of the Convention.

16. The elaboration and implementation of the programme of work should aim at applying the ecosystem approach adopted under the Convention, emphasizing the ecological functions of biodiversity. 3/ Application of the ecosystem approach implies, inter alia, intersectoral cooperation, decentralization of management to the lowest level appropriate, equitable distribution of benefits, and the use of adaptive management policies that can deal with uncertainties and are modified in the light of experience and changing conditions. Implementation of the programme of work will also build upon the knowledge, innovations and practices of indigenous and local communities consistent with Article 8(j) of the Convention.

C. Proposed elements of the programme of work.

17. The proposed programme elements are grouped in two clusters: "Assessment" and "Targeted actions in response to identified needs", which are intended be implemented in parallel. Knowledge gained through the assessment will help guide the responses needed, while lessons learned from activities will feed back into the assessment. Suggested programme elements are provided below.

Cluster A: Assessments

Operational objective

To assemble and analyse information on the state of dryland biodiversity and the pressures on it, to disseminate existing knowledge and

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3/ The future development of the ecosystem approach is considered in the note by the Executive Secretary on the subject prepared for the fifth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (UNEP/CBD/SBSTTA/5/11).

best practices, and to fill knowledge gaps, in order to define responses needed.

Rationale

Dryland ecosystems tend to be naturally highly dynamic disequilibrium systems. Assessment of the status and trends of dryland biodiversity is therefore particularly challenging. A better understanding of the dynamics of biological diversity in drylands, its socio-economic value, and consequences of its loss is needed. This should not, however, be seen as a prerequisite for targeted actions for the conservation and sustainable use of dryland biological diversity. Indeed, lessons learned from practice, including indigenous practice, contribute to the knowledge base.

Activities

Activity 1. Identification of the local and global benefits derived from dryland biodiversity, and assessment of the socio-economic impact of its loss.

Activity 2. Identification of specific areas, within drylands, of particular value for biological diversity, and/or under particular threat, with reference to the criteria in annex 1 to the Convention to Combat Desertification.

Activity 3. Further development of indicators of dryland biodiversity and its loss, in order to elucidate trends.

Activity 4. Building knowledge on processes that affect dryland biodiversity, especially ecosystem structure and functioning (e.g., grazing, fires, agricultural conversion or abandonment).

Activity 5. Identification of best management practices, including indigenous knowledge and practices that can be broadly applied.

Ways and means

The activities of cluster A would be carried out through:

(a) Consolidation of information from various ongoing sources, including those under the Convention to Combat Desertification and other international conventions, the Global Observing System, and other programmes. This process would draw upon ongoing work of these existing programmes, with additional catalytic activities, such as workshops, further use of the clearing-house mechanism under the Convention on Biological Diversity, and partnerships between organizations, including, where appropriate, joint activities of the secretariats of the Convention on Biological Diversity and the Convention to Combat Desertification. Some of these catalytic activities might be funded through the Secretariat of the Convention on Biological Diversity, with in-kind support of participating organizations;

(b) Targeted research, including existing programmes of the international agricultural research centres and national agricultural research systems, with additional funding for priority areas needed to overcome barriers to the conservation and sustainable use of dryland biodiversity;

(c) Case-studies on management practices, carried out primarily by national and regional institutions, including civil-society organizations and

research institutions, with support from international organizations for catalysing the preparation of studies, mobilizing funds, disseminating results, and facilitating feedback and lessons learned to case-study providers and policy makers. New resources may be needed to promote such studies, to analyse the results and to provide necessary capacity-building and human-resource development.

Cluster B: Targeted actions in response to identified needs

Operational objective

To promote the conservation and sustainable use of biodiversity in drylands, and to combat biodiversity loss in drylands and its socio-economic consequences.

Rationale

The activity needed to promote the conservation and sustainable use of dryland biodiversity will depend on the state of the dryland resources and the nature of the threats. Hence, a range of options needs to be considered, from managed use to in situ and ex situ conservation.

Many dryland resources must be managed at the level of watersheds, or at higher spatial levels, implying community or inter-community rather than individual management. This is often further complicated by multiple user groups (e.g., agriculturalists, pastoralists and fisherfolk) and the migratory habits of some animal species and users of biodiversity. Institutions need to be developed or strengthened to provide for biodiversity management at the appropriate scale and for conflict resolution.

Sustainable use of biodiversity in drylands may require the development of alternative livelihoods, and the creation of markets or other incentives to enable and promote responsible use.

Activities

Activity 6. Promotion of specific measures for the conservation and sustainable use of dryland biodiversity, through, inter alia:

(a) The use of protected areas and other special measures for the conservation of dryland biodiversity, including the strengthening of measures in existing protected areas;

(b) The rehabilitation or restoration of biodiversity of degraded lands;

(c) The management of invasive alien species;

(d) The sustainable management of dryland production systems; and, where necessary,

(e) The conservation of dryland biodiversity ex situ.

Activity 7. Promotion of responsible resource management, within ecological principles, at appropriate levels, through an enabling policy environment, including, inter alia:

(a) Decentralization of management to the lowest appropriate level, keeping in mind the need for common resource management;

(b) Creating or strengthening appropriate institutions for land tenure and conflict resolution; and

(c) Encouraging bilateral and subregional cooperation to address transboundary issues (such as facilitating access to transboundary rangelands).

Activity 8. Support for sustainable livelihoods through, inter alia:

(a) Diversifying sources of income to reduce the negative pressures on dryland biodiversity;

(b) Promoting sustainable harvesting, ranching etc.;

(c) Exploring innovative sustainable uses of dryland biodiversity for local income generation, and promoting their wider application; and

(d) Developing local markets for products derived from the sustainable use of biodiversity in drylands, adding value to harvested produce, etc.

Ways and means

The activities of cluster B will be carried out through:

(a) Capacity-building, particularly at the national and local levels, through participatory and bottom-up processes, with funding from bilateral and multilateral sources, and catalytic support from international organizations;

(b) Investments in the development and promotion of sustainable livelihoods, including alternative livelihoods, and conservation measures, through participatory and bottom-up processes, with funding from bilateral and multilateral sources;

(c) Improved consultation, coordination and information-sharing within countries among respective focal points and lead institutions relevant to the implementation of the Convention to Combat Desertification, the Convention on Biological Diversity and other relevant global conventions and programmes, facilitated by the secretariats of the various conventions and other international organizations; and

(d) Enhanced interaction between the work programmes of the Convention on Biological Diversity and the Convention to Combat Desertification, through, inter alia, the regional networks and action plans of the latter; and

(e) Partnerships between relevant international organizations and programmes.

IV. REPORTING FRAMEWORK

18. It is proposed that Parties and other bodies be requested to report on the implementation of the programme of work through, inter alia:

(a) Appropriate sections of the national reports on biological diversity prepared for the Conference of the Parties under Article 26 of the Convention on Biological Diversity; and/or

(b) Reports made in the context of the Convention to Combat Desertification and other relevant conventions.

19. It is proposed that the Subsidiary Body on Scientific, Technical and Technological Advice would review such reports after two years, and make recommendations for the further elaboration of the programme of work at that time. Thereafter, it is proposed that the implementation of the programme be reviewed every four years.

Annex I

ONGOING ACTIVITIES OF INTERNATIONAL ORGANIZATIONS

The Food and Agriculture Organization of the United Nations (FAO)

FAO has many programmes aimed at the sustainable management of dryland resources, through, for example, integrated watershed management. It has well developed programmes on the conservation sustainable use and assessment of crop, grassland, forest and livestock genetic resources. FAO provides the secretariat for the Global Terrestrial Observing System, a cooperative programme with the United Nations Environment Programme (UNEP), the United Nations Educational, Scientific and Cultural Organization (UNESCO), the World Meteorological Organization (WMO) and the International Council of Scientific Unions (ICSU).

The United Nations Environment Programme (UNEP)

UNEP has promoted many programmes to combat desertification, and supports programmes for the conservation of, inter alia, dryland biodiversity. UNEP convenes the Ecosystem Conservation Group, which brings together FAO, the United Nations Development Programme (UNDP), UNESCO, the World Bank, IUCN—The World Conservation Union, the World Wide Fund for Nature (WWF) and the World Conservation Monitoring Centre (WCMC) to promote common strategies.

The United Nations Educational, Scientific and Cultural Organization (UNESCO)

UNESCO provides the secretariat of the Convention concerning the Protection of the World Cultural and Natural Heritage (the "World Heritage Convention"). It also operates the Man and the Biosphere (MAB) programme, which promotes the integrated conservation and sustainable use of resources. Many MAB sites are in drylands.

The International Fund for Agricultural Development (IFAD)

IFAD funds a large number of agricultural development investment projects aimed at reducing poverty in marginal areas, including drylands. It also promotes research through its technical grants programme, and hosts the Global Mechanism for the Convention to Combat Desertification.

The World Conservation Monitoring Centre (WCMC)

Relevant programmes of WCMC include: the protected areas programme, including a database of protected areas; the geographic information system (GIS) laboratory, which, for example, is able to overlay ecological or biotic data with the location of protected areas; and the species programme, with a database on 70,000 plant species and their conservation status. WCMC supports scientific assessments for many of the biodiversity-related conventions. WCMC is increasingly involved in national capacity-building for information management.

The international agricultural research centres

The international agricultural research centres house large ex situ collections of germplasm of dryland crops, such as sorghum, millet, lentil, barley, faba bean, pasture and forage legumes, and have well developed breeding programmes for these crops. Two centres have a mandate that focuses specifically on drylands: ICARDA and ICRISAT. Research areas include

improvement of on-farm water-use efficiency, management and rehabilitation of rangelands, and management and nutrition of small ruminants (such as sheep and goats). The centres pursue their goals of biodiversity conservation and management through established partnerships with national agricultural research systems, international research organizations in the region, and advanced research institutes in the developed world. Examples include the recently started GEF-funded project on conservation and sustainable use of dryland agrobiodiversity in Jordan, Lebanon, the Syrian Arab Republic and the Palestinian Authority, and the Desert Margin programme, which aims at developing integrated national, subregional and international activities to develop sustainable natural-resource-management options to combat land degradation and loss of biodiversity.

Annex II

LINKAGES TO OTHER CONVENTIONS

Convention	Area of shared interest	Possible actions
United Nations Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, Particularly in Africa (CCD)	Biodiversity of arid, semi-arid and Mediterranean ecosystems: especially impact of desertification, and use of biodiversity in mitigating desertification.	• Collection, analysis and exchange of relevant information on the processes and effects of drought and desertification on biodiversity • Joint programmes on research, development, technology transfer, capacity-building, education and public awareness • Integration of CCD national action programmes and national biodiversity strategies and action plans concerning the integrated and sustainable management of natural resources and the promotion alternative livelihoods • Multiple use of information and capacity-building activities in the preparation of national reports for the Convention on Biological Diversity and the Convention to Combat Desertification • Collaboration between SBSTTA and the CCD Committee on Science and Technology
United Nations Framework Convention on Climate Change (UNFCCC)	Impact of climate change and resulting land degradation on dryland biodiversity (recognizing drylands as particularly vulnerable), and contribution of dryland biodiversity to carbon sequestration.	• Joint programmes in capacity-building; • Integration of national implementing mechanisms • Collaboration between SBSTTA and the Intergovernmental Panel on Climate Change

Convention	Area of shared interest	Possible actions
Convention on Wetlands of International Importance, Especially as Waterfowl Habitat (Ramsar Convention)	Wetland habitats, biodiversity and water management in drylands	• Identify those Ramsar sites that are located in drylands • Inform national focal points for the Convention on Wetlands and the Convention on Biological Diversity of need for interlinkages and coordinated planning for conservation and sustainable use
Convention on the Conservation of Migratory Species of Wild Animals (CMS)	Migratory species of animals that inhabit drylands and contribute significantly to their productivity and ecological diversity	• Review CMS appendices to highlight dryland migratory species • Identify key migratory areas / sites in drylands • Inform national focal points for CMS and the Convention on Biological Diversity of the need for interlinkages.
Convention concerning the Protection of the World Cultural and Natural Heritage (World Heritage Convention)	Protected and natural areas of global status and of interest for biodiversity, located in drylands	• Identify World Heritage Convention national sites in drylands • Assess coverage of these ecological zones by World Heritage Convention sites within the framework of the ongoing gap analysis by the secretariat of the World Heritage Convention • Identify possible new World Heritage Convention sites within target ecosystems • Inform national focal points for the World Heritage Convention and the Convention on Biological Diversity of the need for interlinkages.
Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES)	Trade, conservation and sustainable use of dryland species.	• Assess appendices I and II of CITES for dryland and sub-humid species (e.g. cactaceae) • Link this to programmes of livelihood development and species conservation • Inform national focal points for CITES and the Convention on Biological Diversity of the need for interlinkages.

Annex III

LINKAGES TO OTHER THEMATIC AREAS

Thematic areas	Area of shared interest	Possible joint actions
Marine and coastal	Impact on biodiversity of development of coastal regions (e.g., tourism in Mediterranean areas)	• To promote integrated marine and coastal area management
Inland waters	Biodiversity of wetland and riverian habitats in drylands	• Case-studies on and application of integrated watershed management • Transboundary cooperation
Agriculture	Biodiversity of dryland agriculture, including pastoralism; Genetic diversity of crops and livestock	• Case-studies on best practices • Integrated national strategies and action plans
Forests	Biodiversity of wooded savannahs	• Identification and application of indigenous knowledge • Impact of deforestation and reforestation on biodiversity • Activities to control alien species • Case-studies on impacts of fires • Taxonomic studies
Mountains	Biodiversity of mountain areas of drylands	• This thematic area is to be addressed at the sixth meeting of the Conference of the Parties
Common to all thematic areas		• Application of ecosystem approach • Use of the clearing-house mechanism

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