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OPTIONS FOR CONSERVATION AND SUSTAINABLE USE OF BIOLOGICAL DIVERSITY IN DRYLAND, MEDITERRANEAN, ARID, SEMI-ARID, GRASSLAND AND SAVANNAH ECOSYSTEMS

Note by the Executive Secretary

I. INTRODUCTION

1. As provided for in its programme of work (decision IV/16, annex II), the Conference of the Parties will consider in depth at its fifth meeting the biological diversity of dryland, Mediterranean, arid, semi-arid, grassland and savannah ecosystems.

2. The Conference of Parties may wish to:

1. Take note of the assessment of status and trends of the biological diversity of dry and sub-humid lands as considered by the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) at its fourth meeting (see section II and the annex below, and recommendation IV/3 as contained in annex I to the report of the fourth meeting of SBSTTA (UNEP/CBD/COP/5/2));

2. Consider for endorsement SBSTTA recommendation V/8, as contained in the report of the fifth meeting of SBSTTA (UNEP/CBD/COP/5/3), including the establishment of a work programme (see section III below); and

3. Consider the development of a joint work programme with the United Nations Convention to Combat Desertification in those Countries Experiencing Serious Drought and/or Desertification particularly in Africa, as recommended by SBSTTA in paragraph 5 of its recommendation V/8 (see section IV below and information document UNEP/CBD/COP/5/INF/15).

II. ASSESSMENT OF STATUS AND TRENDS

1. At its third meeting, the Conference of Parties in its decision III/13, noting the issues considered by the third session of the Commission on

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Sustainable Development in its review of the sectoral cluster on land desertification, forests and biodiversity, reaffirmed the central importance of biological diversity to sustainable development in drylands. In preparation for consideration of the matter by the Conference of Parties at its fifth meeting, the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), at its fourth meeting, considered an assessment of the status of trends of biodiversity in these environments, based on a note prepared by the Executive Secretary (UNEP/CBD/SBSTTA/4/7). The main points of this assessment, as summarized in the note prepared by the Executive Secretary for the fifth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (UNEP/CBD/SBSTTA/5/9), are annexed to the present note.

III. DEVELOPMENT OF THE PROGRAMME OF WORK

2. Through its recommendation IV/3, SBSTTA requested the Executive Secretary to prepare a draft programme of work, and provided guidance on its scope and preparation.

3. Accordingly, the Executive Secretary prepared a draft programme of work (UNEP/CBD/SBSTTA/5/9) for consideration of SBSTTA at its fifth meeting. In line with the request of SBSTTA, the programme of work was prepared with the assistance 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 draft programme of work was finalized jointly with the Secretariat of the Convention to Combat Desertification.

4. At its fifth meeting, SBSTTA adopted recommendation V/8, recommending that the Conference of Parties establish a programme of work on the biological diversity of dryland, Mediterranean, arid, semi-arid, grassland, and savannah ecosystems, which may also be known as the programme on "dry and sub-humid lands," and to endorse a first phase of the programme of work, as contained in the annex to its recommendation and developed on the basis of the draft prepared by the Executive Secretary. Parties, countries, international and regional organizations, major groups and other relevant bodies would be urged to implement the programme of work.

5. Through paragraphs 5 to 7 of the recommendation, the Executive Secretary would be requested to:

(a) Collaborate with the Secretariat of the Convention to Combat Desertification, including through the development of a joint work programme;

(b) Establish a roster of experts on this thematic area, and

(c) Make available relevant information through the clearing house mechanism.

IV. COOPERATION WITH THE CONVENTION TO COMBAT DESERTIFICATION

6. In its decision III/13, the Conference of Parties requested the Executive Secretary to explore ways and means to cooperate with the Convention to Combat Desertification, on matters relating to biological diversity and drylands, with a view to identifying common priorities. At its fourth meeting, the

Conference of the Parties requested the Executive Secretary to continue to coordinate with the secretariats of biodiversity-related conventions, with a view, inter alia, to explore the possibility of developing joint work programmes (decision IV/15, para 5 (c)).

7. As noted above, the proposed programme of work on the biological diversity of dry and sub-humid lands was prepared in consultation with the Secretariat of the Convention to Combat Desertification. Additionally, and on the basis of their existing memorandum of understanding, the secretariats of the two conventions are working together to identify common priorities and the elements of a possible joint work programme, in line with decisions III/13 and IV/15 of the Conference of the Parties. Information note UNEP/CBD/COP/5/INF/15 provides further information on this matter, which the Conference of the Parties may wish to consider in the context of SBSTTA recommendation V/8.

Annex

SCOPE OF DRYLAND BIODIVERSITY, ITS IMPORTANCE, STATUS AND TRENDS.

1. 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 ecosystems: areas with a P/PET ratio between 0.20 and 0.50;

(d) Mediterranean ecosystems: ^{1/} 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.

2. 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.

3. 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;

^{1/} These include areas in Australia, California, Chile and South Africa, as well as the Mediterranean basin.

(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.

4. 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.

5. 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.
