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Items 5 and 6 of the provisional agenda*

THEMATIC PROGRAMMES OF WORK – PROGRESS REPORT AND CONSIDERATION OF PROPOSALS FOR FUTURE ACTION

Note by the Executive Secretary

I. INTRODUCTION

1. The present note covers activities under the thematic programmes of work on agricultural biodiversity and the biodiversity of dry and sub-humid lands, forests and inland water ecosystems implemented since the ninth meeting of the Conference of the Parties, with a focus on most recent developments. Additional information on progress during this period for these programmes of work was reported to the fourteenth meeting of the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA), as follows: for agricultural biodiversity, document UNEP/CBD/SBSTTA/14/11 and UNEP/CBD/SBSTTA/14/INF/20, 30, 31, 32 and 34; for agricultural biodiversity: biofuels and biodiversity, document UNEP/CBD/SBSTTA/14/12; for dry and sub-humid lands, document UNEP/CBD/SBSTTA/14/13 and UNEP/CBD/SBSTTA/14/INF/35; for forest biodiversity, document UNEP/CBD/SBSTTA/14/14; and for the biological diversity of inland water ecosystems, document UNEP/CBD/SBSTTA/14/3 and UNEP/CBD/SBSTTA/14/INF/1 and 3;

2. Reports were also submitted to SBSTTA on the thematic programmes of work on mountain biological diversity (UNEP/CBD/SBSTTA/14/2) and marine and coastal biological diversity (UNEP/CBD/SBSTTA/14/4 and UNEP/CBD/SBSTTA/14/INF/2, 4, 5, 6, 7, 8, 9 and 10).

3. Suggested action by the Conference of the Parties on all thematic areas is contained in the compilation of draft decision prepared for its tenth meeting (UNEP/CBD/COP/10/1/Add.2) under items 5 and 6 of the provisional agenda.

* UNEP/CBD/COP/10/1.

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II. AGRICULTURAL BIODIVERSITY

4. In response to requests of the Conference on the Parties to study further the impacts of the trade liberalization on agricultural biodiversity and to further gather and incorporate data on this matter (decisions VI/15, paragraph 17, and VII/3, paragraph 6), the United Nations Environment Programme, in close cooperation with the Executive Secretary, initiated in 2005 a five-year initiative on integrated assessment of trade-related policies and biological diversity in the agriculture sector. Funded by the European Union and by the Swedish International Development Cooperation Agency (SIDA), the initiative supported country projects in six African, Caribbean and Pacific (ACP) countries (Cameroon, Jamaica, Madagascar, Mauritius, Papua New Guinea, and Uganda) to assess the economic, social and environmental impacts of trade policies in specific agricultural sectors, with particular attention being paid to the impacts and opportunities for biodiversity. The assessment reports were finalized by the country teams in 2009 and their results and recommendations brought to the attention of relevant government departments and national stakeholders through validation workshops. National policy action plans for the implementation of selected recommendations were prepared in 2009-2010. At a global symposium in Geneva on 25 March 2010, country teams, advisory board members and participants from the Geneva trade and environment community discussed the findings and recommendations of the six country studies, and discussed further the methods, tools and processes that can be used to analyse the relationship between trade policies, agriculture, biodiversity and human well-being.

III. BIODIVERSITY OF DRY AND SUB-HUMID LANDS

5. In decision IX/17, the Conference of the Parties requested the Executive Secretary to: (i) compile and publish a list of case-studies on scientific and technical knowledge including traditional knowledge regarding the management and sustainable use of the biological diversity of dry and sub-humid lands; (ii) carry out a feasibility study for the development of a tool-kit to support the efforts of local and indigenous communities with regard to sustainable pastoralism, adapted agricultural practices, control of soil erosion, valuation of natural resources, water and land-use management, carbon capture and identifying threats that have the greatest impacts on the biodiversity of dry and sub-humid lands; (iii) prepare a compilation of experiences in the field of climate-change mitigation and adaptation, soil management and pastoralism in dry and sub-humid lands; (iv) explore harmonized reporting between relevant conventions and strengthen collaboration on the assessment of status, trends and threats in dry and sub-humid lands; and (v) update the map contained in the annex to decision IX/17 to better reflect dry and sub-humid tropical forests.

A. Case-studies on the management and sustainable use of the biodiversity of dry and sub-humid lands

6. Following the in-depth review of the implementation of the programme of work on the biodiversity of dry and sub-humid lands, the Executive Secretary developed a case-study database on the biodiversity of dry and sub-humid lands with a particular focus on capacity-building. In response to the request for case-studies in decision IX/17, this database has been updated and expanded to better reflect scientific and technical knowledge including traditional knowledge.

7. The case-study database (https://www.cbd.int/drylands/cs/) now contains 43 entries covering all regions except Central and Eastern Europe. Case-studies also cover a broad range of land use types including agriculture, pastoralism, tourism and protected areas and include activities ranging from local to global scales.

B. Feasibility study for the development of a tool-kit

8. The feasibility study to support the efforts of local and indigenous communities with regard to: sustainable pastoralism, adapted agricultural practices, control of soil erosion, valuation of natural resources, water and land-use management, carbon capture and identifying threats that have the greatest impacts on the biodiversity of dry and sub-humid lands revealed that compiling a toolkit to address all of the above issues would be difficult. As such, the option was explored to cluster the above issues into a number of different toolkits.

9. Also of consideration during the feasibility study was the difficulty in disseminating such toolkits to the target audience. The study therefore, highlights the importance of developing partnerships with implementing agencies such as the Food and Agriculture Organization of the United Nations (FAO) to facilitate dissemination. It was also seen as important to ensure that toolkits are translated into languages in order to reach as broad an audience as possible.

10. As a first step, the Executive Secretary, in collaboration with relevant partners, published a toolkit titled, "Pastoralism, Nature Conservation and Development" which is available in English, French and Arabic at: https://www.cbd.int/development/training/guides/.

11. With regards to valuation, SBSTTA in its recommendation XIV/11 recommended that the Conference of the Parties request the Executive Secretary to publish a technical series on valuation for the biodiversity of dry and sub-humid lands in response to the noted lack of existing information and experiences.

12. Finally, with regards to carbon capture, in collaboration with the International Union for Conservation of Nature (IUCN), the Executive Secretary produced a compilation of experiences in the field of climate change mitigation and adaptation, soil management and pastoralism in dry and sub-humid lands (UNEP/CBD/SBSTTA/14/INF/35).

13. It may be appropriate for the Executive Secretary to develop, in collaboration with partners, further toolkits on: (i) water and land-use management including adapted agricultural practices and the control of soil erosion; and (ii) identifying threats that have the greatest impacts on the biodiversity of dry and sub-humid lands.

C. Compilation of experiences in the field of climate-change mitigation and adaptation, soil management and pastoralism in dry and sub-humid lands

14. As indicated above, in collaboration with IUCN, the Executive Secretary produced a compilation of experiences in the field of climate change mitigation and adaptation, soil management and pastoralism in dry and sub-humid lands which was presented as an information note for the consideration of the fourteenth meeting of SBSTTA (UNEP/CBD/SBSTTA/14/INF/35). This note highlights that although drylands have lower mitigation potential per hectare than humid lands, since dry and sub-humid lands cover 47 per cent of the Earth's land surface their overall contribution could be highly significant. In fact, globally, 36 per cent of carbon stored in terrestrial ecosystems is stored in drylands.

15. Furthermore, mitigating climate change through improved drylands management can be achieved through three interrelated channels, firstly through enhancing carbon sequestration (by increasing carbon inputs to soil and above ground woody vegetation and reducing losses), secondly through improving resilience of the ecosystems and drylands populations to climate change and thirdly through the restored vegetative cover of rangeland contributing to sequestration of soil carbon.

D. Explore harmonized reporting and strengthen collaboration on the assessment of status, trends and threats in dry and sub-humid lands

16. The Executive Secretary continues to provide input into the Inter-agency Task Force on Harmonized Reporting convened under the United Nations Convention to Combat Desertification. Under the auspices of this group, the Executive Secretary identified overlap and synergies with regards to the targets set out under the 2010 biodiversity target, which formed the framework for the fourth national reports, and the UNCCD 10-Year Strategic Plan as outlined in the following table. It should be noted, however, that even in cases where indicators are similar or complementary, the difference in definitions of "dry and sub-humid lands" between the UNCCD and the CBD programme of work on the biodiversity of dry and sub-humid lands needs to be considered.

Table. Synergies in targets and indicators

UNCCD 10 Year Strategic Plan	**CBD 2010 biodiversity target**
Strategic objective 1: To improve the living conditions of affected populations	
1.1. People living in areas affected by desertification/land degradation and drought to have an improved and more diversified livelihood base and to benefit from income generated from sustainable land management	
1.2. Affected populations' socio-economic and environmental vulnerability to climate change, climate variability and drought is reduced	
S-1: Decrease in numbers of people negatively impacted by the processes of desertification/land degradation and drought	Health and well-being of communities who depend directly on local ecosystem goods and services
S-2: Increase in the proportion of households living above the poverty line in affected areas	
S-3: Reduction in the proportion of the population below the minimum level of dietary energy consumption in affected areas	Biodiversity for food and medicine
Strategic objective 2: To improve the condition of affected ecosystems	
2.1. Land productivity and other ecosystem goods and services in affected areas are enhanced in a sustainable manner contributing to improved livelihoods	Indicator of access and benefit-sharing Trends in genetic diversity of domesticated animals, cultivated plants, and fish species of major socioeconomic importance
2.2. The vulnerability of affected ecosystems to climate change, climate variability and drought is reduced	
S-4: Reduction in the total area affected by desertification/land degradation and drought	Incidence of human-induced ecosystem failure
S-5: Increase in net primary productivity in affected areas	Trends in extent of selected biomes, ecosystems, and habitats Trends in abundance and distribution of selected species

UNCCD 10 Year Strategic Plan	CBD 2010 biodiversity target
Strategic objective 3: To generate global benefits through effective implementation of UNCCD	
3.1. Sustainable land management and combating desertification/land degradation contribute to the conservation and sustainable use of biodiversity and the mitigation of climate change	Coverage of protected areas Change in status of threatened species Trophic integrity of other ecosystems Connectivity / fragmentation of ecosystems
S-6: Increase in carbon stocks (soil and plant biomass) in affected areas	
S-7: Areas of forest, agricultural and aquaculture ecosystems under sustainable management.	Area of forest, agricultural and aquaculture ecosystems under sustainable management Proportion of products derived from sustainable sources Ecological footprint and related concepts
Strategic objective 4: To mobilize resources to support implementation of the Convention through building effective partnerships between national and international actors	
4.1. Increased financial, technical and technological resources are made available to affected developing country Parties, and where appropriate Central and Eastern European countries, to implement the Convention	Official development assistance provided in support of the Convention
4.2. Enabling policy environments are improved for UNCCD implementation at all levels	Status and trends of linguistic diversity and numbers of speakers of indigenous languages Other indicator of the status of indigenous and traditional knowledge
S-8: Increase in the level and diversity of available funding for combating desertification/land degradation and mitigating the effects of drought	
S-9: Development policies and measures address desertification/land degradation and mitigation of the effects of drought	Indicator of technology transfer

E. Revised map of the delineation of dry and sub-humid lands

17. UNEP-WCMC completed the update of the map delineating dry and sub-humid lands as per the request to better reflect dry and sub-humid tropical forests. In doing so, the World Conservation Monitoring Centre of the United Nations Environment Programme (UNEP-WCMC) compared the map published by Miles *et al* (2006)[1] to show global distribution of tropical dry forests with the map contained in the annex to decision IX/17. The dry forest areas are almost entirely included within the map from decision IX/17. The only exception is some of the seasonally dry forests of continental

[1] Miles, L., A.C. Newton, R.S. DeFries, C. Ravilious, I. May, S. Blyth, V. Kapos and J.E. Gordon. (2006). A global overview of the conservation status of tropical dry forests. *J. Biogeogr.* 33: 491–505.

South-East Asia, but these are climatically relatively moist, being mostly characterized by P/PET ratios well above 0.65 and having few other dryland features.

18. Furthermore, UNEP-WCMC reviewed the ecoregions highlighted as 'to review' in the original maps produced in the study by Sörensen based on expert knowledge. This resulted in the inclusion of the 13 additional ecoregions most likely to include dryland features and/or dry and sub-humid tropical forests. The list of additional ecoregions and the final map are contained in the annex to the present note.

IV. FOREST BIODIVERSITY

19. In paragraph 3 of decision IX/5, the Conference of the Parties requested the Executive Secretary to:

(a) Facilitate, as requested, in close cooperation with existing international, regional and subregional processes, initiatives and organizations, such as the Secretariat of the United Nations Forum on Forests (UNFF), the Food and Agriculture Organization of the United Nations (FAO), the International Tropical Timber Organization (ITTO), and other members of the Collaborative Partnership on Forests (CPF), regional, subregional and/or thematic workshops to support Parties in implementing the programme of work on forest biodiversity;

(b) Collaborate with the other members of the Collaborative Partnership on Forests, in particular the Secretariat of the United Nations Framework Convention on Climate Change (UNFCCC) and the World Bank, in order to support Parties efforts to address reducing emissions from deforestation and forest degradation in developing countries in the framework of the United Nations Framework Convention on Climate Change;

(c) Enhance dissemination and exchange of information, and collaboration between the Secretariat of the Convention on Biological Diversity, the Secretariat of the United Nations Forum on Forests and other members of the Collaborative Partnership on Forests and other relevant organizations and processes;

(d) Explore, together with the Director of the Secretariat of the United Nations Forum on Forests, possibilities for developing a work plan with targeted joint activities between the secretariats of the Convention on Biological Diversity and the United Nations Forum on Forests by identifying commonalities and complementarities of the respective work programmes and submit the results for the consideration of the Subsidiary Body on Scientific, Technical and Technological Advice;

(e) Solicit advice from the Scientific and Technical Review Panel of the Ramsar Convention on Wetlands on the relevance of the joint work programme between the Ramsar Convention on Wetlands and the Convention on Biological diversity and the relevance of the suite of guidelines adopted by the Ramsar Convention, to the implementation of the programme of work on forest biodiversity under the Convention on Biological Diversity, and the role Ramsar Parties can play in contributing to the implementation of this programme, and make this information available to Parties, recognizing that a significant proportion of forests are wetlands;

(f) Collect, compile and disseminate information on the relation between forest ecosystem resistance and resilience, forest biodiversity, and climate change, through the clearing-house mechanism and other relevant means;

(g) Continue the cooperation with the Food and Agriculture Organization of the United Nations and other relevant organizations on the monitoring of forest biodiversity, and on clarifying the definitions of forest and forest types that reflect forest biodiversity at the level appropriate for reporting and monitoring the status of forest biodiversity, building on the existing concepts and definitions

provided by Parties and members of the Collaborative Partnership on Forests and other relevant organizations and regional criteria and indicator processes and report to the Subsidiary Body on Scientific, Technical and Technological Advice prior to the tenth meeting of the Conference of the Parties; and

(h) Make available the outcome of work of the Ad Hoc Technical Expert Group on Risk Assessment and Risk Management, established by the Conference of the Parties to the Protocol at its fourth meeting serving as the meeting of the Parties to the Cartagena Protocol on Biosafety for the consideration of the Conference of the Parties at its tenth meeting.

20. In response to this decision the following activities were carried out:

(a) The heads of the Secretariats of the Convention on Biological Diversity and UNFF signed a Memorandum of Understanding which aims to facilitate the implementation of the Forest Instrument and the UNFF multi-year programme of work and the CBD programme of work, as well as promote joint activities related to the 2010 International Year of Biodiversity and the 2011 International Year of Forests. The partnership also foresees the secondment of a temporary staff position, based in New York at the UNFF secretariat, to carry out joint activities;

(b) The heads of the secretariats of the Convention on Biological Diversity and ITTO signed a Memorandum of Understanding to closely collaborate over the coming four years. The agreement is aimed at facilitating the implementation of activities linked to the conservation and sustainable use of tropical forest biodiversity within the CBD and ITTO work programmes. Concrete joint activities include the development of a support programme for the implementation of the CBD programme of work on forest biodiversity in ITTO member countries. The agreement will be in force until December 2014, and can be extended if mutually agreed;

(c) The Secretariat, in collaboration with the German Development Cooperation (GTZ), and with generous support from the German Ministry of Economic Cooperation and Development (BMZ), facilitated a meeting in Montreal, from 8 to 10 July 2009, on South-South cooperation and sustainable forest management, with a focus on forest biodiversity, between the three major regional organizations of the world's tropical forest regions: the Amazon Cooperation Treaty Organization (ACTO), the Association of South-East Asian Nations (ASEAN), and the Central Africa Forests Commission (COMIFAC);

(d) The Secretariat, in collaboration with UNFF and the National Parks Board of Singapore, and with generous financial support from the government of Germany and the ASEAN Center for Biodiversity (ACB), organized a subregional capacity-building workshop for Southern and South-Eastern Asia in Singapore City, 2-5 September 2009. The workshop aimed at building capacity for improved national and regional collaboration between relevant government actors in the field of forest biodiversity and climate change, including REDD, and climate change adaptation. 50 participants from 13 countries attended the workshop, which was also supported through in-kind contributions in the form of expertise and staff time from members of the Collaborative Partnership on Forests, notably the United Nations REDD Programme (FAO, UNEP, UNDP), IUCN, ITTO, CIFOR, IUFRO, as well as the Swiss Development Cooperation (Inter-cooperation);

(e) The Secretariat, in collaboration with FAO, CIFOR, and the International Council for Game and Wildlife Conservation (CIC), and with generous financial support from the European Commission and the Government of Spain, convened the first meeting of the Liaison Group on Bushmeat, in Buenos Aires from 15 to 17 October 2009. The Liaison Group adopted a set of policy recommendations for the national and international level to improve the conservation and sustainable use of wildlife-based resources. At its fourteenth meeting, SBSTTA recommended that the Conference of the

Parties at its tenth meeting welcome the Liaison Group recommendations and invite Parties and other Governments to implement them, where appropriate;

(f) The Secretariat, in collaboration with ITTO, IUCN and the Government of Ecuador organized an International Conference on Biodiversity Conservation in Transboundary Tropical Forests, in Quito, from 21 to 24 July 2010, to review the status and ways ahead for the conservation, management and financing of biodiversity in tropical Transboundary Conservation Areas (TBCAs). The conference provided an opportunity for sharing and exchanging information and experiences on TBCAs, including their capacity to meet the challenges of climate change mitigation and adaptation. The Conference served as a platform for stakeholders to review the social, economic and political implications and impacts of TBCA projects in order to identify best strategies for their effective contribution to sustainable development;

(g) The Secretariat, in collaboration with UNEP and the UN REDD programme, and with generous financial support from the Government of Germany, organized a global expert workshop on biodiversity guidelines for sustainable forest management under a changing climate. The workshop developed implementation guidelines for synergies between the programme of work on forest biodiversity and REDD-plus;

(h) The Secretariat, in collaboration with CIFOR and other CPF members, co-organized "Forest Days" 2, 3, and 4 at meetings of the Conference of the Parties to UNFCCC to highlight linkages between forest biodiversity and climate change;

(i) The Secretariat participates in the initiative of the Collaborative Partnership on Forests (CPF), led by FAO, on forest degradation, which develops a common definition and a set of indicators for forest degradation;

(j) The Secretariat facilitated a part-time secondment of a senior staff from Canadian Forest Service to support technical and scientific capacity of the Secretariat on requests from the ninth meeting of the Conference of the Parties (in 2008, 2009 and 2010);

(k) The Secretariat participates in the Steering Group of the IUFRO-led Global Forest Expert Panels (GFEP), a joint initiative of CPF. A seconded Canadian Forest Service expert participated in the "Adaptation GFEP";

(l) The Secretariat compiled and disseminated Technical Series No. 47 on "Water, Wetlands and Forests: A Review of Ecological, Economic and Policy Linkages" on World Water Day, 22 March 2010, at events in Nairobi, Cali, Montreal and New York. The report was published jointly with the Secretariat of the Ramsar Convention with financial support from Norway;

(m) The Secretariat compiled and disseminated Technical Series No. 43 on "Forest Resilience, Biodiversity, and Climate Change – A synthesis of the Biodiversity/Resilience/Stability Relationship in Forest Ecosystems";

(n) The Secretariat compiled and disseminated Technical Series No. 41 and 42 on "Connecting Biodiversity and Climate Change Mitigation and Adaptation" and "Review of the Literature on the Links between Biodiversity and Climate Change – Impacts, Adaption and Mitigation";

(o) The Secretariat compiled and disseminated Technical Series No. 33 on "Conservation and Use of Wildlife-based Resources: The Bushmeat Crisis";

(p) The Secretariat published and disseminated, jointly with the German Development Cooperation (GTZ), a brochure on "REDD Benefits: Biodiversity and Livelihoods" for dissemination at the fifteenth meeting of the Parties to UNFCCC, held from 7-18 December 2009, in Copenhagen;

(q) The Secretariat published and disseminated, jointly with IUCN, a Good Practice Guide on "Sustainable Forest Management: Biodiversity and Livelihoods"; and

(r) The Secretariat developed and disseminated an electronic *REDD & Biodiversity e-Newsletter* on biodiversity aspects of efforts to reduce emissions from deforestation and forest degradation (REDD) in the framework of UNFCCC. The first issue was disseminated in October 2008, the ninth issue in April 2010).

V. BIOLOGICAL DIVERSITY OF INLAND WATER ECOSYSTEMS

20. At its fourteenth meeting the Subsidiary Body on Scientific, Technical and Technological Advice, in paragraph 1 of recommendation XIV/2, requested the Executive Secretary and invited the Scientific and Technical Review Panel of the Ramsar Convention on Wetlands, in collaboration with other relevant organizations and initiatives, to prepare proposals for strengthening policy-relevant scientific advice regarding the linkages outlined in paragraph 31 (of recommendation XIV),[2] including options for convening expert group meetings and potential terms of reference for such meetings, and to submit proposals to this effect for the consideration of the Conference of the Parties at its tenth meeting.

21. In response to this request, the Executive Secretary has received inputs from, *inter alia*, the Secretariat and the Scientific and Technical Review Panel of the Ramsar Convention (STRP), the Centre for Ecology and Hydrology (United Kingdom) and the International Water Management Institute.

22. This preliminary expert opinion has provided the following advice:

(a) The relationship between biodiversity and the water cycle is indeed an important and neglected area. Whereas the role of ecosystems (primarily terrestrial vegetation and wetlands) and land use in sustaining water quality is relatively well known, the role of ecosystems and land use in regulating water availability (quantity) is a key area in terms of science needs and awareness. Reviews of the impacts of deforestation on flood risk are available but the role of forests in regulating longer-term water availability in particular requires further review;

(b) A growing body of evidence suggests that significant interactions are occurring between terrestrial vegetation (land-use changes) and water availability, examples include: projected tipping points in the South American water cycle through deforestation in the Amazon basin (as noted in document UNEP/CBD/SBSTTA/14/3); a growing number of countries are reporting shifts in surface water availability due to vegetation loss (Nicaragua is one, and reported impacts there include reduced river flows sufficient to undermine hydropower generation and conversion of lowland forests to agriculture impacting montane cloud forest ecosystems); and, for example, land-cover change in the Mekong River basin, including deforestation, is now thought to be a major driver of change in Mekong River flows;

[2] In paragraph 31 of recommendation XIV/2, SBSTTA recommended that the Conference of the Parties *recognizes* the need for improved guidance on the relationships between biodiversity and water and *calls for* further policy-relevant scientific assessments of the relationships between biodiversity, hydrology, ecosystem services and sustainable development, in particular regarding, *inter alia*: (a) The relationships between the carbon and water cycles, and policies and management interventions in each, and the ability of biodiversity to underpin both cycles; and (b) The impact of the direct anthropogenic use of water on terrestrial biodiversity, and *vice versa*, including, *inter alia*, fluxes between soil moisture, groundwater and evapo-transpiration of plants, and shifts in local and regional precipitation, taking into account any additional water-induced stresses on ecosystems through climate change; and *invites* Parties and other Governments to provide technical and financial support for this work;

(c) A growing body of evidence indicates that human-induced changes in water availability are affecting terrestrial ecosystems – in particular forests. Some evidence and case-studies are available especially for forest-groundwater interactions;

(d) Studies might focus on land-cover in general, not just forests. For example, natural grasslands probably perform a similar function to forests in these regards. The important issue is land-cover change, including the role of natural vegetation *versus* agricultural crops in regulating green and blue water flows;

(e) Changes to local and regional water cycles have significant implications for ecosystem-service delivery from both terrestrial and wetland ecosystems, including carbon storage. But the relationship is a reciprocal one: for example, improved forest carbon stores might (but not necessarily) help sustain water availability (for both people and forests) but water loss from forest ecosystems (either through land-use changes or direct water use by humans) almost certainly can pose significant threats to carbon stores;

(f) In the short-term, vegetation changes may have more significant impacts than climate change on the water cycle and hence on services provided by ecosystems, although climate change could certainly be an additional stressor which drives ecosystems beyond tipping points; and

(g) An expert working group should be established to first review the available information. The process should determine: what is known about the subject in different regions (and levels of scientific confidence associated with this knowledge); knowledge gaps; the importance of the subject, and scale of the identified problems, with regard to sustaining water availability for both ecosystems and people; the policy relevant science based messaging that can be generated now; and the next steps with regards to providing more comprehensive policy relevant advice.

Annex

REVISED MAP OF DRYLAND AND SUB-HUMID LANDS

UNEP WCMC

Revising the CBD maps of the world's dryland areas in relation to dry and sub-humid tropical forests

In accordance with the request to the Executive Secretary in paragraph 13 of decision IX/17, UNEP-WCMC has used two different approaches to "updat(e) the map delineating dryland areas of the world to better reflect dry and sub-humid tropical forests".

In the first instance, we compared the map published by Miles *et al* (2006)[3] to show global distribution of tropical dry forests with the dryland map prepared for the CBD. The dry forest areas are almost entirely included within the areas originally mapped as drylands in the Sörensen study.[4] The only exception is some of the seasonally dry forests of continental South-East Asia, but these are climatically relatively moist, being mostly characterised by P/PET ratios well above 0.65 and having few other dryland features.

In the second approach, we have reviewed the ecoregions highlighted as 'to review' in the original maps produced in the study by Sörensen based on expert knowledge. This resulted in the inclusion of the 13 additional ecoregions most likely to include dryland features and/or dry and subhumid tropical forests, as follows:

Ecoregions included in dryland areas following review
Selenge-Orkhon forest steppe
Tian Shan montane steppe and meadows
North-western Himalayan alpine shrub and meadows
Central Tibetan Plateau alpine steppe
Southeast Tibet shrublands and meadows
Pamir alpine desert and tundra
Yarlung Tsangpo arid steppe
Hawaii tropical low shrublands
North Tibetan Plateau-Kunlun Mountains alpine desert
Hawaii tropical high shrublands
Maputaland-Pondoland bushland and thickets
Ascension scrub and grasslands
Drakensberg alti-montane grasslands and woodlands

The resulting map is shown below, and it is this map that we recommend serve as a final drylands map for the Convention on Biological Diversity.

[3] Miles, L., A.C. Newton, R.S. DeFries, C. Ravilious, I. May, S. Blyth, V. Kapos and J.E. Gordon. (2006). A global overview of the conservation status of tropical dry forests. *J. Biogeogr.* 33: 491–505.

[4] Sorensen, L. (2007). A spatial analysis approach to the global delineation of dryland areas of relevance to the CBD programme of work on dry and sub-humid lands. UNEP-WCMC, Cambridge.

Revised map of dryland and sub-humid lands

(Developed from the map contained in the annex to decision IX/17 including those eco-regions originally identified in that map and those that, according to expert judgment, are most likely to include significant dryland features and tropical dry forests.)