



# CONVENTION ON BIOLOGICAL DIVERSITY

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## SUBSIDIARY BODY ON SCIENTIFIC, TECHNICAL AND TECHNOLOGICAL ADVICE

Eleventh meeting

Montreal, 28 November – 2 December 2005

Item 4.2 of the provisional agenda\*

### IN-DEPTH REVIEW OF THE IMPLEMENTATION OF THE PROGRAMME OF WORK FOR THE GLOBAL TAXONOMY INITIATIVE

*Note by the Executive Secretary*

#### *Addendum*

#### ELEMENTS OF PLANNED ACTIVITIES FOR THE NEW PROGRAMMES OF WORK

##### I. INTRODUCTION

1. At its sixth meeting, the Conference of the Parties (COP) adopted a programme of work for the Global Taxonomy Initiative (GTI), including planned activities for thematic work programmes and cross cutting issues of the Convention (decision VI/8, annex). However, for mountain biological diversity (planned activity 13), invasive alien species (planned activity 15), and protected areas (planned activity 18) it was decided that development of these activities would be undertaken following discussion of these issues by the Conference of the Parties. At its seventh meeting, the Conference of the Parties adopted the programmes of work on mountain biological diversity (decision VII/27, annex) and protected areas (decision VII/28, annex), and took a decision on invasive alien species (decision VII/13). In decision VII/31, the Conference of the Parties decided to consider island biodiversity as a new issue for in-depth consideration at its eighth meeting. The Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) at its tenth meeting considered island biological diversity and made recommendations on the proposed programme of work for consideration by the Conference of the Parties.

2. The Executive Secretary has prepared the present note with the assistance of the GTI Coordination Mechanism to propose taxonomic activities that could be planned to support implementation of the work on mountain biological diversity (section II), invasive alien species (section III), protected areas (section IV), and the goals and targets identified by SBSTTA at its tenth meeting for island biological diversity (section V).

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## II. PLANNED ACTIVITY: MOUNTAIN BIOLOGICAL DIVERSITY

### (i) *Rationale*

3. The taxonomic composition of mountain biodiversity varies with the biogeographic region, the latitude and the altitude of the mountain as well as with the relief. In some cases, mountains provide a necessary seasonal resource for organisms at other times found in lowland biomes. Furthermore most groups of organisms have representatives in the lowland as well as in montane region, and so a vast range of groups of organisms is encountered rather than a few taxonomic groups. Consequently, montane regions are often hot spots of biodiversity, which renders their full taxonomic treatment a challenge and requires many actors and experts for different organisms.

4. As most mountain ranges extend over considerable length and area, a regional approach to mountain biodiversity is of paramount importance, and relevant information is available in many different databases and inventories. Therefore, the Global Taxonomy Initiative can contribute to the mountain biodiversity programme of work in several ways, including collating relevant information and expertise.

### (ii) *Outputs*

5. An increased knowledge of the species composition of mountains through national taxonomic studies and inventories. The Global Taxonomy Initiative could aid the programme of work on mountain biological diversity through:

(a) *Working lists of organisms* - assembling working lists of organisms occurring in montane areas including their vernacular names, with reference to altitude and relief;

(b) *Working identification keys* – producing identification keys in printed and electronic form useful for the conservation, monitoring and sustainable use of organisms in montane areas;

(c) *Dissemination of data* – distributing the working lists and keys as widely as possible to increase their usefulness;

(d) *Human resources* – address and support taxonomic experts to encourage their participation in relevant training programmes, and supporting the establishment of local reference and data collections of montane biota;

(e) *Hot spots and protected areas* – providing relevant taxonomic information, infrastructure and human resources to identify hot spots of mountain biodiversity and to establish and monitor protected areas.

### (iii) *Timing*

6. As current knowledge of mountain biodiversity is still inadequate, the Global Taxonomy Initiative will make an ongoing effort to develop and improve working lists and working identification keys for montane organisms. Within the next three years, it will attempt to develop taxonomic guides, computerised lists of montane organisms, and identification keys in consultation with appropriate national taxonomy and management agencies.

### (iv) *Actors*

7. The mountain biodiversity programme of work identified many relevant actors, such as Global Mountain Biodiversity Assessment (GMBA) of DIVERSITAS, Mountain Partnership, Mountain Forum, BioNET-INTERNATIONAL (to organize regional loops), the FAO for agricultural aspects, the clearing-house mechanism of the Convention and the Global Biodiversity Information Facility (GBIF), the Global Environment Facility (GEF) and national funding bodies for financial support, the Global Strategy for Plant Conservation (GSPC) (for plants), national organizations and nature conservation agencies including relevant non-governmental organizations, local communities, and many others.

8. The scientific community with past and current research programmes on mountain biodiversity and the natural history museums with specimens collected over decades hold a key role in providing the expertise and relevant information and should actively be included.

(v) *Mechanisms*

9. Existing mechanisms, such as the clearing house mechanism and Coordination Mechanism of the Global Taxonomy Initiative, Mountain Partnership, and Mountain Forum, and GBIF could be used to coordinate and promote the efforts.

(vi) *Financial, human resources and other capacity requirements*

10. Financial, human resource and capacity building require funds to be identified within existing and new projects, as well as additional resources to be made available to increase technical capacity in developing countries.

(vii) *Pilot projects*

11. Pilot projects could be build on information for a number of montane regions of the world, such as the Alps, the Andes, the Himalayas, the Eastern Arc to produce the outputs in short term and to evaluate their usefulness. The Global Taxonomy Initiative could address, *inter alia*, the needs of local and regional capacity-building by coordinating workshops in collaboration with mountain partnership, Mountain Forum and DIVERSITAS, focussing on mountain biodiversity conservation and monitoring. The Global Biodiversity Information Facility (GBIF) has indicated its interest in developing specific data fields and portals for montane organisms.

### III. PLANNED ACTIVITY: INVASIVE ALIEN SPECIES

(i) *Rationale*

12. Management of invasive alien species can be improved through better understanding and characterization of the species associated with major pathways for invasions. For example, thorough understanding of the taxonomic composition of ballast water is an important input to effective management of ballast water species that may become or have already become invasive. Furthermore, better taxonomic characterization of invasive alien species facilitates monitoring, which can be critical in early detection and management of invasions. In addition, better baseline taxonomic information on biodiversity in areas that are exposed or susceptible to key invasion pathways (e.g., marine ports) can facilitate early detection of changes in species composition that may result from invasive alien species.

(ii) *Outputs*

13. Outputs should comprise:

(a) Databases of invasive alien species and occurrences of invasions developed and/or expanded, and made widely available;

(b) Working identification keys for known invasive alien species associated with key invasion pathways produced and disseminated;

(c) Working lists of organisms in areas that are exposed or susceptible to key invasion pathways produced and utilized by local monitoring authorities.

(iii) *Timing*

14. Databases further developed and/or expanded and made widely available within two years. Working identification keys for known invasive alien species produced and disseminated within

three years. Working lists of organisms in areas that are exposed or susceptible to key invasion pathways produced and utilized within three years.

(iv) *Actors*

15. Database development – IUCN Species Survival Commission (SSC) Invasive Species Specialist Group, Global Invasive Species Information Network, clearing-house mechanism of the Convention, ITIS, IABIN, GBIF, Species 2000, BioNET-INTERNATIONAL. Identification keys – scientific community, national Governments, natural history museums. Working lists of organisms in areas that are exposed or susceptible to key invasion pathways – national governments, national and regional organizations including non-governmental organizations.

(v) *Mechanisms*

16. Coordinated efforts at the national and global levels by the actors identified above will be an important mechanism. In addition, existing mechanisms, such as the clearing-house mechanism of the Convention and the GBIF can function as information portals.

(vi) *Financial and human resources and other capacity requirements*

17. Financial, human-resource and capacity building require resources to be identified within existing and new projects, as well as additional resources to be made available to increase technical capacity in developing countries. GEF and national funding organisations would be important sources of financial support.

#### **IV. PLANNED ACTIVITY: PROTECTED AREAS**

(i) *Rationale*

18. Taxonomic expertise and information constitute key requirements for conservation planning and sustainable natural resource management. This is especially true in the case of protected areas, which are established with the goal to conserve a significant part of natural biodiversity, but usually based on limited knowledge or available information about the biodiversity they actually contain. With no complete species inventory currently available for any existing or planned larger protected area and relevant taxonomic, distributional and biological information about many taxa with high conservation value still missing, it will be difficult to achieve meaningful conservation planning. The objective of the programme of work on protected areas is to support the establishment of ecologically representative and effectively managed national and regional systems of protected areas. Activity 1.1.2 of the programme of work specifically calls for establishing protected areas in any large, intact or highly irreplaceable natural areas, as well as areas securing the most threatened species, and activity 1.1.5 requests that gap analyses at national and regional levels of the representativeness of the protected area system be undertaken (by 2006). The GTI could play an important role particularly for the identification, establishment and management of protected areas (decision VII/28, annex, programme element 1) through focusing on biodiversity inventories and gap analysis of existing inventories, and in the development of standards for managing and monitoring protected areas (decision VII/28, annex, programme element 4) through facilitating assessments and comparisons of different taxonomic components of biodiversity covered and sustained through the existing network of protected areas. In light of threats to protected areas through climate change and invasive alien species, it is important to understand current constraints on species and populations, and how these would determine distribution under changing conditions. Access to accurate information on current distributions and ability to model these is important for appropriate management and policy development.

(ii) *Outputs*

19. Improved and augmented biodiversity inventories of protected areas of all kinds, also to be expanded into monitoring efforts to record changes of species and populations over time. Taxonomic guides for key invertebrate organisms, lower plants and microorganisms, economically important and threatened species. Information on current distribution and occurrence of important species in protected areas, including population trends. Identification of habitats and priority setting for establishing new protected areas, through plotting distributions of species at local, national and regional levels. Mobilization and augmentation of specimen and observational-level data pertaining to species to allow modelling of current distributions and distributions under different models of climate change and of other biotic and a biotic changes (e.g. land-use change, invasive species).

(iii) *Timing*

20. The target date for activity 1.1.5, on conducting gap analysis is 2006. The target date for goal 4.3 (to assess and monitor protected area status and trends) and goal 4.4 (to ensure that scientific knowledge contributes to the establishment and effectiveness of protected areas) of the programme of work is 2010. Hence, outputs need to be produced within the next four years, but efforts will need to be ongoing.

(iv) *Actors*

21. National agencies and local authorities concerned with protected area administration and management in concert with taxonomic institutions, especially natural history museums, biosystematics units at universities and other research institutions, botanic gardens and culture collections, and the IUCN Species Survival Commission, together with nature conservation agencies including international non-governmental organizations such as Conservation International, BirdLife International, Flora and Fauna International, WWF, the World Resources Institute (WRI), and local communities. Parataxonomists could also play an important role. Other actors include the clearing-house mechanism of the Convention and GBIF (as data portals), GEF and national funding organizations for financial support, and BioNET-INTERNATIONAL (to organize regional loops). Other biodiversity conventions, including the Ramsar Convention on Wetlands, the World Heritage Convention, the Convention on Migratory Species, and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), and the UNESCO Man and the Biosphere (MAB) biosphere reserve programme could also play an important role. Direct linkages to relevant ongoing or planned taxonomy-related, capacity building projects should also be implemented, e.g., the International Pollinator Initiative (IPI), the Census of Marine Life (CoML), the Botanical/Zoological Network for Eastern Africa, the Partnerships of Enhancing Expertise in Taxonomy (PEET), and the recently proposed European Distributed Institute for Taxonomy (EDIT).

(v) *Mechanisms*

22. Coordinated effort at national and global levels by the actors identified above will be an important mechanism. Mobilisation of extant data and their presentation in an appropriate manner, with the development of the analytical tools, is required. The need for identification keys, inventories and primary data must be communicated effectively to the key agencies and funding bodies, with an indication of priority.

(vi) *Financial, human resources and other capacity requirements*

23. Insofar as the requirements need a focus cutting across traditional work processes and patterns of the data providers, funding will be required that is focussed at meeting the identified needs.

(vii) *Pilot projects*

24. Stimulate and undertake efforts to carry out All-Taxon Biodiversity Inventories (ATBIs) in existing or planned protected areas. Gap analyses of representative taxa found in protected areas, in the

context of the distribution and presence of those taxa at other sites nationally and regionally, demonstrating the development and use of such analyses in protected area selection and management. Mobilization of primary occurrence data of species in a protected area, provision of these data to country of origin, and analysis of distributions using a niche modelling system.

## **V. ISLAND BIOLOGICAL DIVERSITY**

25. As noted in SBSTTA recommendation X/1, paragraph 6, islands incorporate all the thematic areas (coastal and marine biological diversity, forest biological diversity, inland water biological diversity, dry and sub humid land biological diversity, mountain biological diversity and agricultural al biological diversity) considered under the Convention. Thus, the planned activities already identified under operational objectives 4 (on thematic programmes of work) and 5 (relating to work on cross cutting issues) in the GTI programme of work (decision VI/8, annex, planned activities 8-18) already identified for thematic and cross cutting programmes of work could also be considered to generate taxonomic information needed for the conservation of island biological diversity, sustainable use of its components and fair and equitable sharing of benefits arising from its use.

26. However, recognizing the current alarming rate of loss of island biological diversity in both biodiversity 'hot' and 'cool' spots; that due to their isolation, island environments are witnessing a unique evolution of often endemic and characteristic flora and fauna; that islands are microcosms of their continental counterparts; that vulnerability of small islands require not only special but urgent attention, special support is needed to islands, in particular small islands, to implement, as a matter of urgency, the planned activities 8 to 18 of the GTI programme of work.

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