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REPORT OF THE STAP BRAINSTORMING ON THE USE OF TAXONOMIC INFORMATION KEY OUTCOMES AND SUGGESTIONS

PARIS, FRANCE
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(Prepared by the Scientific and Technical Advisory Panel)

**Report of the
STAP Brainstorming on the Use of Taxonomic Information:
Key Outcomes and Suggestions**

**Paris, France
June 30, 1999**

Prepared by
***The Scientific and Technical Advisory Panel (STAP)
Of the Global Environment Facility (GEF)***

**STAP Secretariat
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1.0 INTRODUCTION

The Scientific and Technical Advisory Panel (STAP) of the Global Environment Facility (GEF), at its meeting in Paris, June 1999 considered a number of taxonomic themes, and reached some broad conclusions, on how the GEF can assist countries deliver the aims of the Global Taxonomy Initiative (GTI), within the context of its operational programmes. GEF was so requested by Conference of Parties (CoP) IV of the Convention Biological Diversity (CBD) in May 1998. It was understood that the GEF could not possibly drive the GTI – it is the product of CoP decision which will be implemented jointly and severally by the Parties. None-the-less, the GEF has a key role to play through its work in countries with the operational programmes, to help in the delivery of some aspects of the GTI such as development of taxonomic databases.

The key themes considered at the meeting included the following:

- *How management and use of taxonomic information can help the Conventions, (especially the Convention on Biological Diversity), and GEF to address the issues of conservation, management, benefit sharing and sustainable use of biodiversity;*
- *Needs and priorities assessment at the national and regional level;*
- *Mechanisms at the national and regional level for capacity building required to address the taxonomic impediment;*
- *Taxonomy related products such as electronic identification keys and monitoring;*
- *Linking institutions in North-South and South-South collaborative activities.*

There was agreement among participants that the taxonomic impediment is a rate-limiting step to progress in implementing biodiversity programmes. They were also of the view that many good examples of taxonomic work exist including GEF supported projects involving Indonesia, Costa Rica and the South African Botanical Network. It was clearly desirable that the GEF accelerate the process and multiply the successes through stand-alone projects and as components of biodiversity projects. There are numerous other projects, current and completed, which show how taxonomic capacity can be developed and taxonomic information mobilized in the broader context in which the GEF operates. These exemplars are often small in scale and the GEF family has a clear opportunity to assist in 'scaling up' this work, as well as improving the global store of taxonomic knowledge through its programmes.

It may be expected that CBD CoP V will produce some different and stronger guidance to the financial mechanism on the issue of the GTI, once the Subsidiary Body on Scientific, Technical and Technological Advice (SBSTTA) IV recommendation has been considered. This document is intended to help the GEF family plan in advance of CoP V, while building on existing decisions.

2.0 BACKGROUND

A key decision of the CBD CoP III in Buenos Aires, November 1996, was agreeing the development of a Global Taxonomy Initiative (GTI). CoP IV in Bratislava took that decision further and requested GEF's assistance through its operational programmes to assist in implementation of the GTI. In addition, meetings in 1998/99 (in Darwin, London, New York and Paris) highlighted the need for fundamental taxonomic knowledge of biological diversity to allow effective implementation of the key objectives of the CBD.

The London meeting also suggested formalising the GTI as an Umbrella Project under the patronage of UN agencies. CBD-SBSTTA IV reiterated its view that the Executive Secretary of the CBD should have key leadership for the GTI, and so a major issue is how to link that leadership with the roles of UN agencies (especially UNEP, FAO, and UNESCO). The partnerships being developed between the GEF Secretariat and UNEP and UNDP could play a decisive role here.

Our current taxonomic system is a long way from perfect, as we still do not know all the elements. Without an understanding of what the elements are, and how they depend on each other, we cannot truly adopt a proactive ecosystem approach to management, as the CBD is attempting to do. Moreover the existing taxonomic information is not well organized especially in case of recipient countries to help promote the CBD objectives. It is important to understand that the governments of the world who recognise the CBD have acknowledged the existence of a *taxonomic impediment* to sound management and conservation of biodiversity.

In this vein, it is worth re-stating some of the key reasons for the importance of taxonomy, which include an understanding of key organisms that enable:

- (i) a scientific basis for conservation, management, and benefit sharing of all levels of the biodiversity hierarchy;
- (ii) development of food security;
- (iii) identification and control of human disease vectors;
- (iv) identification and control of vectors contributing to ecosystem dysfunction;
- (v) the promotion of health through an understanding of preventive and curative agents found in biodiversity.

A facilitatory function to drive the science will complement the newly established co-ordination activities to be undertaken by the Programme Officer for Taxonomy in the CBD Secretariat. Involvement of the GEF Family in accelerating taxonomic activity in the developing world can help prioritise the co-financing efforts. Activities under the GTI must be broadly based and linked with on-going activities of scientific NGO's - *inter alia*, Association of Systematics Collections (ASC), *DIVERSITAS* and IUBS.

The GEF approach to resolving the taxonomic impediment, and assisting the advance of the GTI, may be three-pronged:

- (i) stand-alone taxonomy projects;
- (ii) taxonomy as a component of a project;
- (iii) taxonomy as a component of enabling activities.

- For category (i) a framework of action to stimulate country-driven action is needed, which includes criteria to guide 'needs-assessment' in countries (in relation to their existing state/status of taxonomy and taxonomic information). These criteria would be based on existing models of practice (CONABIO, SABONET, INBIO, etc.).
- For (ii) major projects should be encouraged to include taxonomists and to utilize relevant taxonomic information in the design of the project, and where appropriate in its implementation. That way, the "value-add" from the taxonomic community can be maximised.
- For (iii) support for taxonomy under enabling activities could be used to conduct the necessary stocktaking, identification of options, and drafting the respective section of biodiversity strategy and action plan.

3.0 DEPLOYING TAXONOMIC INFORMATION TO PROMOTE CBD OBJECTIVES

A very effective way to assist recipient countries overcome the taxonomic impediment in promoting CBD objectives of conservation, sustainable use and benefit sharing would be to support efforts to organize available taxonomic information in electronic databases in a Geographical Information System (GIS) context. This would involve extensive repatriation of taxonomic information now often logged in herbaria, museums and libraries of countries of the north; rather than of physical specimens since the latter would call for much greater effort and financial investments. Such an effort would also profit from development of meta-databases (i.e., databases of existing databases). This exercise of management of information could also encompass popular names and names in different local languages. Assistance will then be needed not only to build taxonomic capacity, but capacity in information technologies as well. These programmes could particularly focus on groups such as medicinal plants, wild relatives of cultivated plants, indicators of pollution, pests and pollinators. CONABIO of Mexico and INBIO of Costa Rica provide two possible but different models for promoting these activities.

4.0 KEY ISSUES IN STRENGTHENING TAXONOMIC CAPACITIES IN DEVELOPING COUNTRIES

4.1 Capacity Building

The taxonomic impediment cannot be resolved without developing the human and institutional capacities in developing countries. Various mechanisms for capacity building at the national and regional level were examined, including:

- Development of new networks and strengthening of existing ones, such as SABONET, and other networks such as NABIN and IABIN which help deliver results regionally, yet preserve the country-driven approach, and focus on building human and institutional capacity. Typically, networks promote projects resulting in improvement of information and communication services, training of taxonomists, increasing the security, management and effectiveness of collections, and the development of computer-aided taxonomic tools;
- Professional taxonomic training;
- Training of technicians to manage taxonomic information in a GIS context, including building, and providing access for biodiversity managers to megadatabases.

4.2 **Development of Country-driven proposals**

Development and mobilisation of parataxonomic support teams is an example of a promising rapid approach to address a taxonomic need. INBIO (Costa Rica) has demonstrated the potential of such action to develop South-South support, but the costs of such exercises need to be carefully evaluated.

The CBD articles request Parties to inventory their biodiversity. These inventories are best achieved through repatriation of taxonomic information held abroad, organization of such information in databases and through the development of *Floras* and *Faunas*, which give wider access to the inventoried information. These efforts are often country-driven, but will usually repay a wider regional or sub-regional approach, as species distributions often are not congruous with national borders. There could be an interaction with global cataloguing programs such as Species 2000, and the GBIF proposed by OECD countries. Such efforts could provide a service of synonyms/names and hotlinks. Any activity under the proposed OECD GBIF needs to be linked to the GTI, and GEF activity. Here is an area where the Programme Officer from the CBD Secretariat should be linking with the GEF family and the other key UN agencies mentioned earlier, to work with the nascent GBIF Secretariat.

4.3 **The role of South-North and South-South Cooperation**

A strategy is needed to link the Mega-institutions of the developed world with the taxonomic needs of developing countries. A key activity in this context will be the repatriation of taxonomic information to the developing countries. But the northern institutions must drive these issues themselves, and, indeed, they indicated a willingness to help in the Darwin Declaration. In many cases, for example in the UK through the Darwin Initiative, they are already active in this. Perhaps an initiative developing liaison officers from key countries to key institutions (similar to those operating at RBG KEW) could be developed, and there may be a role here for the GEF, linked with particular projects in relevant Operational Programmes.

Existing and developing south-south linkages should be encouraged; e.g. SABONET and the developing CONABIO-INBIO - Humbolt Institute linkage for Latin America. Such south-south partnerships may be of especial interest to the GEF, but again context needs to be realised.

4.4 **Taxonomy-related products**

In the category of taxonomy-related products the development of electronic and non-electronic identification keys for priority groups were considered a priority activity, which could be easily combined with training, capacity building and access to taxonomic information. The CBD depends on knowledge about species, and thus on ensuring accurate identification. Electronic keys to help *inter alia* identify pest insects; helpful insects, freshwater quality indicators, pollinators, etc are a prime need. These can be developed as stand-alone projects, or as part of other ongoing projects. STAP, through its deliberations, can continue to assist the GEF with selection of areas of support for this activity.

Another important area of application of Identification keys is the identification of alien species. Taxonomic efforts linked, for example, to the alien invasive species

programme of work is impossible without a strong base of expertise able to identify species. The arrival and impact of alien invasive species cannot easily be anticipated and the best early warning system is having taxonomic capacity. Before alien species can be recognised and identified you need the ability to recognise and identify native species. Part of the taxonomic impediment arises from the lack of such expertise in many countries.

Taxonomy for environmental monitoring, pollution, other environmental issues such as outcomes from impact assessment, and general monitoring activities in inland Waters, depend on selection and use of viable indicators. Such indicators can come from a well-organised taxonomic system, but are less effective if the basic taxonomy is poorly developed. There is also a need to integrate taxonomic activities into stand-alone projects – perhaps each GEF project could be encouraged to explain how the taxonomic impediment would be reduced in their proposed outcomes.

5.0 **KEY AREAS FOR GEF FUNDING OF COUNTRY-DRIVEN ACTION TO REDUCE THE TAXONOMIC IMPEDIMENT**

Following are a number of areas where GEF funding could be invested to reduce the taxonomic impediment. These are summarised as:

- **Repatriation of taxonomic information and building of taxonomic databases**, on the lines of CONABIO of Mexico.
- **Capacity building with UNDP and knowledge-based activities of UNEP** – These could be developed under the developing partnership agreements.
- **Linking the GTI with agrobiodiversity efforts**, including for food security.

Promotion of regional/sub-regional workshops:

- While GEF normally operates through developing country-driven proposals, taxonomic elements of projects have the challenge of needing to embrace regional, sub-regional or global aspects. A necessary step in stimulating such proposals is identification of the needs, priorities and opportunities through **convening regional/sub-regional workshops and seminars**.
- Promoting the development of **regional databases and networks** (e.g. SABONET and BIONET INTERNATIONAL) was considered a key activity and is a potential key role for GEF. Priority would be for groups of economic and/or conservation importance. This will also help efforts in promoting integration of traditional and more “western” scientific approaches. Such projects will yield information that will support the development of follow-up projects, including the building of identification keys and monitoring activities. Integration of the two approaches could be achieved through the development of the means to link traditional names to scientific names.
- Focus on **short-term results**, and ensure projects are realistically timed. **Flora** products for example need to be produced quickly, perhaps using capacity of existing projects, or broader projects to advance the work, noting that a good

project, like the Nepal Plant Information Project (funded under the Darwin Initiative), will take two years to create basic information. Three-year projects are usually adequate for the mobilisation of much taxonomic knowledge, and while inadequate to complete the work, would make significant progress and, once completed, might suggest further phases with different outputs.

UNDP in particular could be helpful through facilitating south-south co-operative efforts – including across regions related biologically, even if not geo-politically.

- **Ensure projects dealing with protected area establishment** are based on adequate taxonomic information, so the effectiveness of conservation may be more effectively measured.
- **Training placements and collaboration on joint projects** are other workable approaches. A major barrier to progress at present is the lack of a straightforward route for developing countries to gain the resources needed to make this happen. Implementing Agencies, and the GEF Council itself, may wish to consider this issue as a key way to accelerate relief from the taxonomic impediment.
- Ensure **training needs for Taxonomy** and for organizing taxonomic information are integrated with actual project implementation
- **The GTI Programme Officer** in the CBD Secretariat should develop a kit on the GTI, what it is, how it can be implemented, how to link with GEF and other co-financing Funding possibilities etc. Such a kit can explore the setting of the GTI in the global scientific and geo-political realities. The development of a consortium approach (e.g. FAO/UNEP/UNESCO) to help advise the Executive Secretary of the Convention on how to implement the CoPs *desiderata* will be crucial in ensuring good training outcomes, as well as broader implementation of the GTI.