

*Please provide the following details on the origin of this report.*

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*Please provide summary information on the process by which this report has been prepared, including information on the types of stakeholders who have been actively involved in its preparation and on material which was used as a basis for the report.*

The study of the Colombian biodiversity is carried out by many institutions at the international, national and regional levels, but the bulk of scientific support is given by the universities and research institutions in Colombia. At the end of 2003, the Instituto de Ciencias Naturales of Universidad Nacional de Colombia, Bogotá, was designed by the Colombian Ministry of Environment to act as a Focal Point for the GTI initiative. The Instituto de Ciencias Naturales is recognized as the leading institution for taxonomy in Colombia (with 34 researchers, 70% of whom can perhaps be termed taxonomists, it has the highest density of taxonomists of any institution in the country). It holds the largest and most important collections on plants and animals from Colombia. The institute has graduate programs (Master of Science and Ph. D. program) in Taxonomy and Systematics and in Biodiversity and Conservation. These programs have been the major basis for developing current taxonomic capacity in Colombia. Most taxonomists working in Colombia were trained at the Instituto de Ciencias Naturales. The Instituto de Ciencias Naturales (its professors and students) is the source for nearly all taxonomic work published in the country (certainly more than 80%).

Because of that, many of the taxonomic activities and their results are linked with the activities of the Instituto de Ciencias Naturales. At the moment we are working in making a plan at the national level to strengthen the taxonomic activities in Colombia, under the GTI initiative. Nevertheless, for this report we considered not only the action taken at the Instituto de Ciencias Naturales, as the main center of taxonomy in Colombia, but also the activities developed by other institutions in Colombia, in many cases in association with other institutions. The main institutions in Colombia currently taking actions aimed to the implementation of the Global Taxonomy Initiative, besides the Instituto de Ciencias Naturales (<http://www.icn.unal.edu.co/>), are: Instituto de Investigación de Recursos Biológicos Alexander von Humboldt, Instituto SINCHI, Instituto de Investigaciones Marinas y Costeras “José Benito Vives de Andrés”-INVEMAR, and other centers of research, most of them based on regional universities.

**REPORT ON IMPLEMENTATION OF PROGRAMME OF WORK FOR THE  
GLOBAL TAXONOMY INITIATIVE**

**Programme of Work for the Global Taxonomy Initiative  
Annex to Decision VI/8**

**Operational Objective 1. Assess taxonomic needs and capacities at national, regional and global levels for the implementation of the Convention**

1. Has your country undertaken any taxonomic needs assessments and identified priorities in this regard?	
a) no (please specify the reasons)	
b) no, but assessment is under way	
c) yes, some needs assessments made (please provide details)	
d) yes, comprehensive assessments made (please provide details)	X
Further comments on country-based taxonomic needs assessments and identification of priorities	
<p>A taxonomic needs assessment and an identification of priorities in Colombia were done in 1999, when the results of a national survey concerning systematics in Colombia were published (<i>Agenda de Investigación en Sistemática/Biodiversidad Siglo XXI. Colombia</i>). We are currently in the process of updating that information to have a more accurate diagnosis.</p> <p>A source of update information is the inform made recently by the Instituto Humboldt (<i>Actualización Estado de la Investigación en Biodiversidad y de la Cooperación Científica y Técnica en Colombia 2003</i>: <a href="http://www.humboldt.org">http://www.humboldt.org</a>)</p>	
2. Has your country worked with other countries in the region to undertake regional taxonomic needs assessments and identify priorities in this regard?	
a) no (please specify the reasons)	
b) no, but some collaborative projects are being considered or planned	
c) yes, some activities undertaken (please provide details)	X
d) yes, many activities undertaken (please provide details)	
Further comments on regional taxonomic needs assessment and identification of priorities	
<p>In 2003 we held one meeting in Maracay, Venezuela, with other Latin-American countries, to exchange information about taxonomic capacity assessment. The first regional-level assessment (Andean countries) was made by the Andean countries as part of the AndinoNET initiative, on the BIONET Programme.</p>	
3. Is your country involved in any activities as part of a global taxonomic needs assessment?	
a) no	
b) yes (please provide details)	X
Further comments on the involvement in the activities for the global taxonomic needs assessment	
<p>Colombia is involved in the following activities or organisms related with the global taxonomic needs assessment:</p> <p>BIONET: Colombia is member of the AndinoNET Initiative.</p> <p>GBIF: Colombia joined the GBIF as an associate participant in September 2003.</p>	

4. Is your country undertaking any activities of public education and awareness to promote the implementation of the programme of work for the GTI?	
a) no	
b) yes, some programmes developed and some activities undertaken (please provide details)	x
c) yes, comprehensive programmes developed and many activities undertaken (please provide details)	
Further comments on public education and awareness programmes and activities	
Publications addressed to a large public have increased during the last years in Colombia. We have now field guides with good taxonomic support for some groups of plants and animals at local, regional and national level. Nevertheless, we are just starting to create a popular culture on our natural resources based on the availability of this kind of publications.	

***Operational objective 2. Provide focus to help build and maintain the systems and infrastructure needed to obtain, collate and curate the biological specimens that are the basis for taxonomic knowledge***

5. Is your country working to strengthen global and regional capacity building to support access to and generation of taxonomic information <sup>1</sup> ?	
a) no (please specify the reasons)	
b) no, but some programmes under development	
c) yes, limited capacity building (please provide details)	X
d) yes, significant capacity building (please provide details)	
Further comments on global and regional capacity building to support access to and generation of taxonomic information	

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<sup>1</sup> Responses to question 5 are expected to focus on, but not limited to (a) human capacity building; (b) infrastructure capacity building.

Colombia has developed the following activities to strengthen national capacity in taxonomy

a. Human capacity building

- Three courses of biological collection management have been taught in the period 2000-2004.
- An update course on a specific plant group, addressed to Colombian botanists, is developed every year, during the annual meeting of the National Association of Herbaria.
- National Workshops dealing with identification of plant material at the Colombian herbaria.
- Establishment of a Ph.D. program in Systematics at the Instituto de Ciencias Naturales

b. Infrastructure capacity building: We have been working, at different levels, on the technical infrastructure, specially that related with capture and management of the information from the scientific collections (data base implementation):

- Elaboration of protocols for scientific collection managements (e.g. Simmons, J. E. & Y. Muñoz. 2003. The theoretical bases of collections management. Collection Forum 18 (1-2): 38-49.)
  - Standardization of information on data bases for biological collection (SIB system)
- Digitization of the information from the biological collections at the Instituto de Ciencias Naturales has been strongly developed in the last year. This information is expected to be released throughout the web in the near future. Similar digitization processes have been developed at the Instituto Sinchi, the Instituto Humboldt, and other institutions.

6. Is your country working with other countries to create and/or strengthen the networks for regional cooperation in taxonomy?

a) no	
b) no, but consultation is under way	
c) no, but some plans and programmes are under development	
d) yes, some activities undertaken for this purpose (please provide details)	x
e) yes, comprehensive activities undertaken for this purpose (please provide details)	

Further comments on strengthening of existing networks for regional cooperation in taxonomy

As a part of the AndinoNET network we are working in association with other Andean countries to strength local capacity. The first meeting was held in 2003, and a new meeting is due in the next months. As a result, we expect to define activities that will share the strengths of the parties.

**Operational objective 3. Facilitate an improved and effective infrastructure/system for access to taxonomic information, with priority on ensuring that countries of origin gain access to information concerning elements of their biodiversity**

7. Is your country involved in the development of a coordinated global taxonomy information system, in particular the infrastructure to access digitized data/information?	
a) no	
b) no, but some plans are being considered	
c) yes, to a limited extent (please provide details)	X
d) yes, to a significant extent (please provide details)	
Further comments on involvement in the development of a coordinated global taxonomy information system	
Colombia joined the GBIF as an associate participant in September 2003. At the domestic level, the Colombian Biodiversity Information Facility (Sistema de Información en Biodiversidad-SIB) was established in 2003, under the leadership of Instituto Humboldt, and with active participation of Instituto de Ciencias Naturales, Instituto Sinchi, IDEAM and INVEMAR. The SIB seeks to create a network whereby information on biological information can be shared. The SIB is currently in its initial stage, and the network is expected to be in operation in the near future. In the meanwhile, taxonomic authority files have been created, to facilitate information exchange.	

**Operational objective 4. Within the major thematic work programmes of the Convention include key taxonomic objectives to generate information needed for decision-making in conservation and sustainable use of biological diversity and its components**

8. Has your country made any taxonomic studies and inventories at the national level, which provide a basic assessment of forest biological diversity, in particular in areas under current threat for habitat conversion, or of high conservation value?	
a) no (please provide the reasons)	
b) no, but some programmes are under development	
c) yes, some studies and inventories made (please provide details)	
d) yes, comprehensive studies and inventories made (please provide details)	x
Further comments on taxonomic studies and inventories made for a basic assessment of forest biological diversity	

Colombia has a large tradition of taxonomic work. We have a continued and active production of information of biological diversity. Some of the most relevant contribution on inventories are published in periodical journals and non periodical series; the most important ones are the journals CALDASIA (published since 1940, see <http://www.icn.unal.edu.co/>), Revista de la Academia Colombiana de Ciencias Exactas, Físicas y Naturales, and Biota Colombiana, which include most of the taxonomic studies on the continental and, to some extent, marine biota from Colombia.

Besides that, many ongoing projects seek to provide a basic knowledge of the Colombian biota; some of they are:

- Flora of Colombia: aimed to produce taxonomic treatments for the Colombian plant families. Until now, we have produced 22 monographs; several more are underway.
  - A Catalog of the Plants of Colombia. This project, started in 2003, seeks to produce a Catalogue of all vascular and non-vascular plants of Colombia, estimated to be ca. 26,000. The first draft version is expected to be available for distribution to the specialists by November 2005. A final version is expected by 2008.
  - Fauna de Colombia: aimed to produce taxonomic treatments for the Colombian fauna groups.
  - Colombia Diversidad Biótica. This series seeks to produce state-of-the-art overviews of particular ecoregions of Colombia. So far, four volumes have appeared, the last two ones dealing with the páramo and the Pacific area, respectively.
  - Red Books of Colombian Biota. This magnificent and well-documented series seeks to provide the basic information whereon conservation activities can be based. So far, seven volumes have been produced: two volumes on flowering plants, and one each on bryophytes (mosses, liverworts), birds, freshwater fishes, reptiles, and amphibians.
- For more projects and publications see <http://www.icn.unal.edu.co/>.

9. Has your country undertaken any taxonomy-related activities relating to marine and coastal biodiversity, in particular taxonomic work related to identification of ballast water organisms and monitoring health of mangrove systems through their invertebrate fauna?

a) no	
b) not applicable	
c) no, but some programmes are under development	
d) yes, some activities undertaken (please provide details)	
e) yes, many measures undertaken (please provide details)	X
Further comments on taxonomy-related activities identified in the programme of work on marine and coastal biodiversity	

Most of the information related with taxonomy of marine organisms in Colombia is produced by Instituto de Investigaciones Marinas y Costeras "José Benito Vives de Andrés"-INVEMAR and its associates. This institution has a large amounts of projects and publications.

Some of the projects and publications are:

Research Projects:

- Biodiversity of marine ecosystems.
- Macrofauna of the continental shield of the Pacific Ocean in Colombia.

Publicaciones:

- Manual de identificación CITES de invertebrados Marinos de Colombia
- Acero, A. & R. Franke. 2002. Peces del Parque nacional Natural Gorgona. Serie Publicaciones Especiales INVEMAR 7: 123-31.
- Lemaitre, R., J. García-Gómez, R. V. Sternber & N. H. Campos. 2001. A new genus and a new species of crab of the family Goneplacidae Macleay, 1838 (Crustacea: Decapoda: Brachyura) from the tropical western Atlantic. Proc. Biol. Soc. Wash. 114 (4): 951-963.
- Navas, S. & N. H. Campos. 2001. Crustáceos estomatópodos colectados por los cruceros INVEMAR-macrofauna, incluyendo dos nuevos registros para el mar Caribe colombiano. Bol. Invest. Mar. Cost. 30: 67-76.
- Navas, S., S. Zea & N. H. Campos. 2002. Doce primeros registros de crustáceos galateidos (Decapoda, Anomura) para el mar Caribe colombiano. Bol. Invest. Mar. Cost.

For more information and projects about the study of marine organisms in Colombia see <http://www.invemar.org.co>

10. Has your country developed taxonomic support for implementing relevant actions identified in the programme of work on dry and sub-humid lands biodiversity, in particular identification of key indicator taxa like lichens?

a) no (please provide reasons and plans for improvement)	
b) not applicable	
c) no, but some programmes are under development	
d) yes, some activities undertaken (please provide details)	x
e) yes, many activities undertaken (please provide details)	

Further comments on taxonomic support for implementing the programme of work on dry and sub-humid lands biodiversity

There has been an increasing interest on working in arid lands in Colombia and several programs and projects have been proposed (in fact, a group at the national level to work on different aspects of dry and arid lands was constituted by 2002 during the Second Colombian Botanical Congress). Nevertheless, very few of the programs and projects have got support. Most of the information obtained during the last years has been produced by rather isolated research projects, aimed to study particular aspects (or specific taxonomic groups) in different dry and arid lands in Colombia. Financial support is needed for this purpose.

11. Has your country developed taxonomic support for implementing relevant actions identified in the programme of work on inland waters biodiversity, in particular regional guides to freshwater fish and invertebrates as an input to ecosystem monitoring for river and lake health?

a) no	
b) no, but some programmes are under development	
c) yes, some activities undertaken (please provide details)	

d) yes, many activities undertaken (please provide details)	X
Further comments on taxonomic support for the implementation of the programme of work on inland waters biodiversity	
<p>There are several colombian researchers working on the taxonomy of freshwater fishes and invertebrates. Some of the publications are:</p> <ul style="list-style-type: none"> <li>• Campos, M. R., C. Magalhaes &amp; G. Rodriguez. 2002. The freshwater crabs of southern Colombia and their biogeographical affinities (Brachyura: Pseudothelphusidae). Nauplius 10: 15-25.</li> <li>• Campos, M. R. &amp; R. Lemaitre. 2002. A new species of freshwater crab of the genus Potamocarcinus H. Milne Edwards, 1853 (Crustacea: Decapoda: Brachyura: Pseudothelphusidae). Proc. Biol. Soc. Wash. 115: 600-604.</li> <li>• Mojica, J., C. Castellanos, S. Usma &amp; R. Alvarez (eds.). 2002. Libro Rojo de las especies dulceacuicolas de Colombia. La Serie Libros Rojos de Especies amenazadas de Colombia. Instituto de Ciencias Naturales, Universidad nacional de Colombia, Ministerio del Medio Ambiente. Bogotá, Colombia.</li> <li>• Rodríguez, G., M. Rocha &amp; B. López. 2002. New species and new records of Pseudothelphusid crabs (Crustacea: Brachyura) from Colombia. Tulane Studies in Zoology and Botany 31 (2): 1-16.</li> </ul> <p>Several investigations are been developed:</p> <ul style="list-style-type: none"> <li>• Freshwater fishes from the Orinoco region.</li> <li>• Fishes from the Leticia region, Colombian Amazon.</li> <li>• Revision of the freshwater crabs from Colombia.</li> <li>• Ecology of the fishes from lagoons and freshwater rivers in the Colombian Amazon.</li> <li>• Continental mollusk from Colombia. Establishment of a reference collection.</li> </ul> <p>For more information: <a href="http://www.icn.unal.edu.co/">http://www.icn.unal.edu.co/</a></p>	
12. Has your country undertaken any taxonomy-related activities identified in the programme of work on agricultural biodiversity as well as relevant activities identified in the International Pollinator Initiative and the International Soil Biodiversity Initiative?	
a) no	
b) no, but some activities are being planned	x
c) yes, some activities undertaken (please provide details)	
d) yes, comprehensive activities undertaken (please provide details)	
Further comments on taxonomy-related activities for the implementation of the programme of work on agricultural biodiversity	
The studies on these fields in Colombia has been rather isolated, and it is in need of more work.	
13. Is your country developing any taxonomic support for the implementation of the programme of work on mountain biodiversity, in particular identification of biodiversity components unique to mountain ecosystems?	
a) no	
b) no, but some programmes are under development	
c) yes, limited support (please provide details)	x
d) yes, significant support (please provide details)	

Further comments on taxonomic support for the implementation of the programme of work on mountain biodiversity	
<p>There have been many activities related to the study of the mountain areas and its conservation, at different levels. The most relevant ones are included in the following research projects:</p> <ul style="list-style-type: none"> <li>• Study of the biota of the páramo areas in Colombia.</li> <li>• Conservation and sustainable use of the biodiversity of the Colombian Andes.</li> </ul> <p>More information on projects and publications in <a href="http://www.icn.unal.edu.co/">http://www.icn.unal.edu.co/</a> and <a href="http://www.humboldt.org">http://www.humboldt.org</a></p> <p>In spite of the large amount of information produced and published, much more information is in urgent need because the mountain ecosystem in Colombia is currently the most endangered bioma.</p>	
14. Has your country developed taxonomic support for the implementation of the programme of work on protected areas?	
a) no	
b) no, but some programmes are under development	
c) yes, some programmes in place and are being implemented (please provide details)	x
d) yes, comprehensive programmes are being implemented (please provide details)	
Further comments on taxonomic support provided to the implementation of the programme of work on protected areas	
<p>Although the number of taxonomic studies on protected areas has increased during the last years, there is still a lack of information on which species we are protecting inside our natural reserves. Some projects have been prepared to achieve this goal more efficiently.</p>	

**Operational objective 5. Within the work on cross-cutting issues of the Convention include key taxonomic objectives to generate information needed for decision-making in conservation and sustainable use of biological diversity and its components**

15. Has your country taken any measures to strengthen capacity for the inventory and classification of biodiversity and its components in the development of a national strategy on access and benefit-sharing?	
a) no	
b) no, but some programmes are under development	
c) yes, some measures taken (please provide details)	x
d) yes, comprehensive measures taken (please provide details)	
Further comments on the measures to strengthen capacity for the inventory and classification of biodiversity and its components in the development of a national strategy on access and benefit-sharing	

Several projects at different institutions are studying useful species and assessing the actual and potential demand of goods and services derived from biodiversity by industrial actors, the State, its institutions and the general public. One of the more advanced project to this respect is developed by the Instituto Humboldt throughout the Use and Valuation Program, which deals with the assessment of methodologies for valuation and their applicability to the resolution of specific problems such as the recovery of dry forest in the Caribbean, the management of mangroves, the conservation of urban biodiversity and others (see <http://www.humboldt.org>).

Related with this issue, the Instituto Humboldt, as well as other institutions in Colombia, has initiated a process of encouraging productive activities through the identification of demand and supply conditions for different goods and services linked to local communities and international markets. The sustainable production of primary crafts within this context is being developed through a convention with the FES Foundation and Artesanías de Colombia in order to identify products and services of commercial interest for global markets. This last aspect has special importance, as it binds the BIOTRADE initiative of UNCTAD with the Foreign Trade Ministry and Proexport.

Within the strategy on access and benefit-sharing, there is also a Policy and Legislation Research Program, which aims to promote, coordinate and carry out research on the impact of policies and norms upon the knowledge, conservation and sustainable use of biodiversity in Colombia (see <http://www.humboldt.org>).

16. Has your country developed taxonomic support to address the issues of invasive alien species?

a) no	
b) no, but relevant policy and programme under development	
c) yes, some policies and programmes in place (please provide details)	x
d) yes, comprehensive policies and programmes in place (please provide details)	

Further comments on taxonomic support to address the issues of invasive alien species

Very recently (this year), we began a program to make a strategy to study invasive species in Colombia. By now we are in the process of consolidating the team with specialists and interested biologists on this topic in Colombia.

17. Has your country developed taxonomic information system to support the maintenance, preservation and protection of traditional knowledge, innovations and practices of indigenous and local communities in accordance with Article 8(j) and related provisions?

a) no	
b) not applicable	
c) no, but some programmes are under development	
d) yes, some activities undertaken but a system is not in place yet (please provide details)	x
e) yes, a taxonomic information system in place (please provide details)	

Further comments on the taxonomic information system to support the maintenance, preservation and protection of traditional knowledge, innovations and practices of indigenous and local communities

Besides its high biodiversity, Colombia has a huge cultural diversity with at least 80 ethnic groups which are considered traditional including indigenous peoples, Afro-Americans and farmers. Several institutions at national and regional level in Colombia, are developing several projects in order to study the biodiversity as a source of richness or as a result of its direct or indirect use, or for the services it provides. Those projects include study of the useful species, and economic analysis of the production of the products. Nevertheless, this topic deserves more attention.  
 More information: <http://www.humboldt.org>

18. Has your country undertaken any taxonomy-related activities that support the implementation of the ecosystem approach and the work in the field of assessments, monitoring and indicators?

a) no	
b) no, but some programmes are under development	x
c) yes, some programmes in place (please provide details)	
d) yes, comprehensive programmes in place (please provide details)	

Further comments on programmes and activities to support the implementation of the ecosystem approach and the work in the field of assessments, monitoring and indicators

There are several projects and publications related with this issue, and some theoretical and technological bases are available for the country. Nevertheless, it is a field in need of more development.  
 See information: <http://www.icn.unal.edu.co>; [www.humboldt.org](http://www.humboldt.org)

***If your country wishes to provide additional information on implementation of this programme of work, please do so in the following space***

Colombia has a large tradition of taxonomic studies and because of that we have, at the regional level, a significant support in terms of human capacity. Nevertheless, our biodiversity is huge and the deforestation rates are high. We need to strengthen and accelerate our capacity to make inventories and to study the natural history of the species in order to provide tools for accurate biodiversity management. Fortunately, we have a good capacity to undertake the inventory of several of our more important groups, although we need extra support for the inventory on some complex and unknown groups (like some invertebrate groups). Nevertheless, the main obstacle for our development in this sense is the lack of financial support to promote research, to have more taxonomists working and to have the appropriate facilities and required keeping conditions for the biological collections. Virtually no biological collection in Colombia has the required financial support. The Colombian government is not yet aware of the importance of providing support to biological collections.

We do need much more support to increase our taxonomic activities, to engage more taxonomists in the giant task of building the required corpus of information on one of the most biodiverse countries on Earth.

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