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

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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 survey that was received from the GTI Coordination Officer was sent via e-mail to a list of institutions that are known to employ taxonomic experts in Canada: e.g. universities, government laboratories and organizations, professional organizations and museums. The completed documents were received and compiled into a summary format. Two months were allowed for responses.

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)	X
d) yes, comprehensive assessments made (please provide details)	
Further comments on country-based taxonomic needs assessments and identification of priorities	
In 1995 a report was completed by a consultant who worked mostly with federal agencies; “Systematics an Impending Crisis” and “La Systématique Une crise imminente”. In 2002 a report entitled, “Capacity Gap Analysis and Statement of Requirement” was completed for the Federal Biosystematics Partnership and noted key federal needs for taxonomic expertise (e.g., non-tariff trade barriers, invasive species, and human disease vectors) and capacity gaps related to these needs.	
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)	X
b) no, but some collaborative projects are being considered or planned	
c) yes, some activities undertaken (please provide details)	
d) yes, many activities undertaken (please provide details)	
Further comments on regional taxonomic needs assessment and identification of priorities	
Canada is a large country that could potentially participate in several regions. There are no or extremely limited resources for taxonomic capacity building in Canada and for participating in regional planning meetings. If the meetings are coincidental with other initiatives, such as the Global Biodiversity Information Facility or SBSTTA meetings, the likelihood of participation is greater.	
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	
Various experts who contribute toward the Integrated Taxonomic Information System (Canada), which is provided through the information technology services of Agriculture Agri-Food Canada, are making an indirect contribution to a global taxonomic needs assessment by identifying groups that lack authoritative species lists.	

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	X
b) yes, some programmes developed and some activities undertaken (please provide details)	
c) yes, comprehensive programmes developed and many activities undertaken (please provide details)	
Further comments on public education and awareness programmes and activities	
Canada's many natural history museums, zoos and aquariums point to the importance of taxonomic expertise, but these do not specifically make reference to the program of work of the Global Taxonomy Initiative.	

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[1]?	
a) no (please specify the reasons)	
b) no, but some programmes under development	
c) yes, limited capacity building (please provide details)	
d) yes, significant capacity building (please provide details)	X
Further comments on global and regional capacity building to support access to and generation of taxonomic information	
Canada is a significant contributor to the Global Biodiversity Information Facility, through its committee structure and its Governing Board. Canada has a network of nodes that contribute to GBIF; linked to GBIF through http://www.cbif.gc.ca . The Huntsman Marine Science Centre (HMSC) and the Atlantic Reference Centre (ARC) are natural history museums and specimen repositories for marine fauna of Canadian Atlantic waters. There is also an Alliance of Natural History Museums of Canada, many none government organizations and efforts, as well as university collections that contribute information through the Canadian Biodiversity Information Facility website and other venues, such as the Ocean Biogeographic Information System , Nature Serve, International Ocean Data Exchange, the Census of Marine Life and the Barcodes of Life.	
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	

[1] Responses to question 5 are expected to focus on, but not limited to (a) human capacity building; (b) infrastructure capacity building.

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	
Canada, through the Federal Biodiversity Information Partnership, has entertained meetings with representatives from IABIN to understand their initiatives and to better appreciate how our work may contribute to that network. Canada has held workshops to facilitate the use of current bioinformatics resources related to museum specimens, in English and French (DiGIR training). Taxonomic experts work within other countries as much as possible, in opportune collaborative efforts and as resources allow: e.g. with INBio in Costa Rica and with CONABIO in Mexico. Canada has a number of natural history museums, most specializing in regions of Canada or beyond, that collect, maintain and make accessible specimens for use by educators and research scientists. For example, the Huntsman Marine Science Centre (HMSC) with its Atlantic Reference Centre (ARC) acts as a regional natural history museum and specimen repository for the Gulf of Maine and Scotian Shelf portions of the NW Atlantic. Canada is a member of the Gulf of Maine Ocean Data Management Partnership.	

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)	
d) yes, to a significant extent (please provide details)	X
Further comments on involvement in the development of a coordinated global taxonomy information system	

Canada was part of the group of countries that formed the Global Biodiversity Information Facility and is involved in the Governing Board and many working groups.

Canada is involved in many informatics projects on the global scale, including for example, the ITIS, Barcodes of Life, OBIS, FishBase, HerpNet, NatureServe, and Census of Marine Life.

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)	X
d) yes, comprehensive studies and inventories made (please provide details)	

Further comments on taxonomic studies and inventories made for a basic assessment of forest biological diversity

The largest national scale inventory of forest biodiversity is the National Forest Inventory (NFI) http://www.pfc.forestry.ca/monitoring/inventory/nfi_e.html . With a network of plots across the country (minimum of 50/ecozone) it is designed for national level reporting and to integrate environmental, social and economic information at political, temporal and spatial scales. The NFI is also designed to mesh with other inventories at finer scales such as the Alberta Biodiversity Monitoring Program, Environmental Monitoring and Assessment Network plots and the Parks Ecological Integrity Monitoring plots. The ground plots include a complete vegetation inventory of all vascular plants; a project is underway to assess the benefits of including non-vascular plants such as lichens. Additional attributes include soil pits, analysis of fine woody debris and forest health (insects and diseases). The inventory monitoring is backed by taxonomic expertise for vascular plants, insects and diseases.

An example of results from the province of British Columbia for this kind of project may be viewed at http://www.for.gov.bc.ca/hfd/pubs/biodiv/animals-reptiles.htm .

In general, Canada draws upon a body of experts that are employed by universities, museums, government departments, non-government organizations and private consulting companies. If the financial resources and time for a work program are available, these resources could be applied.

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)	X
e) yes, many measures undertaken (please provide details)	
Further comments on taxonomy-related activities identified in the programme of work on marine and coastal biodiversity	
Ballast Water has been monitored by the Department of Transport for 3-4 years. Invasive or new species to Canadian waters are identified by experts at universities, museums or in private consulting companies. Specimens are kept by museums or in government collections and are generally made available for future investigations. The Department of Fisheries and Oceans have undertaken Fisheries and Oceanographic Research Surveys for 30+ years. It is the founder of the Centre for Marine Biodiversity and an active participant in its projects.	
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)	X
b) not applicable	
c) no, but some programmes are under development	
d) yes, some activities undertaken(please provide details)	
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	
In general, Canada draws upon a body of experts that are employed by universities, museums, government departments, non-government organizations and private consulting companies. If the financial resources and time for a work program are available, these resources could be applied. Currently, there is no program in place.	
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	X
b) no, but some programmes are under development	

c) yes, some activities undertaken(please provide details)	
d) yes, many activities undertaken (please provide details)	

Further comments on taxonomic support for the implementation of the programme of work on inland waters biodiversity

This is not a taxonomic development activity, but does organize and utilize the expertise that is currently in place. Canada has a Committee for the Status of Endangered Wildlife in Canada, with a group that concerns itself with fishes and another for invertebrates. It does not specifically address ecosystem health, but the taxonomic experts do a thorough review of the status report of identified species of concern.

A national working group composed of representatives from all provinces and territories and two federal government agencies - Environment Canada (Canadian Wildlife Service) and Fisheries and Oceans Canada – produced *Wild Species 2000: The General Status of Species in Canada*. It contains general status assessments for a broad cross-section of over 1,600 Canadian species, including freshwater fish. Data coverage has recently been expanded to include freshwater mussels and dragonflies/damselflies.

Through the expertise of museum workers and university faculty, produces taxonomic keys for freshwater fishes and invertebrates of Canada. These same experts mentor young experts in their laboratories when possible. Digitized specimen records are becoming more available through the Canadian Biodiversity Information Facility website (http://www.cbif.gc.ca)

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	
c) yes, some activities undertaken (please provide details)	X
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

Agriculture Agri-Food Canada is the federal agency leading in this type of work; they have produced some primary literature that provides a substantial review of thematic biodiversity topics (e.g. Behan-Pelletier, V.M. 2003. Acari and Collumbola Biodiversity in Canadian Agricultural Soils. Can. J. Soil Sci. 83:279-288). They are planning specific activities to assess biodiversity of mites in Canadian agricultural soils, specifically watersheds/riparian zones, under the National Land and Water Information System program. Research programs addresses the biodiversity of Oribatida, an important group of arthropods in all soils, in Canadian landscapes, and includes descriptions of new taxa, revisionary and systematic works (many taxonomic publications relevant to Canadian agroecosystems). Through collaborations in agriculture there are Web-based products under development that will be visible through the CBIF URL (http://www.cbif.gc.ca).

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	X
b) no, but some programmes are under development	
c) yes, limited support (please provide details)	
d) yes, significant support (please provide details)	
Further comments on taxonomic support for the implementation of the programme of work on mountain biodiversity	
In general, Canada draws upon a body of experts that are employed by universities, museums, government departments, non-government organizations and private consulting companies. If the financial resources and time for a work program are available, these resources could be applied. Currently, there is no program of activities in place.	
14. Has your country developed taxonomic support for the implementation of the programme of work on protected areas?	
a) no	X
b) no, but some programmes are under development	
c) yes, some programmes in place and are being implemented (please provide details)	
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	
In Canada the most significant activity is through Parks Canada which obtains its taxonomic support for vascular plants in-house capacity (many parks maintain herbaria), and for birds and mammals they often rely on experts from museums, other government departments (e.g. forest insects) and universities. The list of species for national parks utilizes NatureServe taxonomic standards relying closely on the scheme presented through the Integrated Taxonomic Information System (using Biotics software and a contractual arrangement for taxonomic updates). For description of plant ecosystems Parks Canada uses provincial standards or local plot data. With NatureServe, Parks Canada is attempting to collaborate with and other government departments in developing a standard description for Canadian and North American ecosystems.	

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	X
b) no, but some programmes are under development	
c) yes, some measures taken (please provide details)	
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	
In general, Canada draws upon a body of experts that are employed by universities, museums, government departments, non-government organizations and private consulting companies. If the financial resources and time for a work program are available, these resources could be applied. Currently, there is no program of activities in place. Plans are under way for a national workshop on “ABS and Scientists” to be held at the Canadian Museum of Nature this fall. This will include presentations and discussions on ABS, taxonomy, and genomics.	
16. Has your country developed taxonomic support to address the issues of invasive alien species?	
a) no	X
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	
There is no program in place to develop taxonomic support, but Canada draws upon a body of experts that are employed by universities, museums, government departments, non-government organizations and private consulting companies. If the financial resources and time for a work program are available, these resources could be applied. The Canadian Food Inspection Agency, the main regulatory body that prevents the introduction of invasive alien species, has some in-house taxonomic expertise and works closely with taxonomic experts within Agriculture and Agri-Food Canada and the Canadian Forest Service to address issues of invasive alien species. A national strategy on invasive alien species, currently awaiting implementation funding, would strengthen taxonomic support to address this issue.	

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	X
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)	
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	
There is ongoing work with indigenous peoples in Canada to explore management and resource use issues, especially: e.g. the Marshal Program for fish management and science programs conducted by aboriginal fish and game associations.	
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	X
b) no, but some programmes are under development	
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 is no program in place to develop taxonomic support, but Canada draws upon a body of experts that are employed by universities, museums, government departments, non-government organizations and private consulting companies. If the financial resources and time for a work program are available, these resources could be applied. Environment Canada’s Ecological Monitoring and Assessment Network is developing a series of ecozone-based species assessments (e.g., the Biodiversity Assessment of the Mixed-Wood Plain Ecozone) which draw upon existing taxonomic expertise within the federal government.	