

Belgian Report on the Implementation of
the Programme of Work for
the Global Taxonomy Initiative

2004

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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.

- May 2004: the CBD / GTI focal point prepares a first draft of the report
- June-August 2004: this first draft is submitted for consultation to colleagues within the Royal Belgian Institute of Natural Sciences.
- August-September 2004: a revised draft is submitted to colleagues in other taxonomic institutions and at universities.
- September 2004: The report is submitted for approval to the members of the Steering Committee 'Biodiversity Convention' operating under the authority of the Coordinating Committee for International Environmental Policy (CCIEP).

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Information on the main actors for taxonomy in Belgium

1. Major taxonomic facilities

The Royal Belgian Institute of Natural Sciences (RBINS) has been designated as GTI focal point for Belgium. Located in Brussels, this museum and research institute houses a rich zoological (including paleontological) collection, completed by a large number of prehistoric items and a diverse geological collection, including minerals and core samples. Geographical areas of taxonomical expertise not only focus on the Belgian fauna, but also on the fauna of other regions of the world as for example Africa (great lakes, national parks of DRC), SE Asia, Papua New Guinea, South America (Galapagos Islands, Argentina), Russia (Lake Baikal) and Antarctica. Focus ecosystems are terrestrial, freshwater and marine. An internal audit in 2004 estimates that the collections include about 30 million zoological specimens. It can be estimated that there are about 200,000 types of recent animals and 30,000 types of fossil animals. The mollusc collection includes some 9 million specimens representing more than 45,000 species and is ranked in the top five world-wide. Other important collections are the insect collection, estimated at a 14 million specimens and the vertebrate collection reaching one million specimens. The library possesses 350,000 titles, among which about 1,000 titles were published before 1900. The museum acts as a showcase for the scientific research conducted by the Institute, with thousands of specimens on display in permanent galleries.

<http://www.naturalsciences.be>

The Royal Museum for Central Africa (RMCA), in Tervuren, is a museum, research institute and knowledge centre on the biodiversity of living species in the context of their natural environments in Africa, particularly Central Africa. It holds the largest biodiversity collection of Central Africa, offering a complete cross-section of reference material from many taxa. Furthermore, the majority of the specimens originate from the relatively poorly studied megadiversity belt in the equatorial region of Africa, from West Africa and from the Comoro archipelago. Expertise is predominantly focused on terrestrial and freshwater ecosystems. The zoological collections hold specimens from nearly 125,000 species: 7-8 million invertebrates of 117,000 species and 1.5 million vertebrates of 6,115 species. They hold holotypes of 26,615 insect, 543 fish, 226 bird, 104 reptile, 81 amphibian and 36 mammal species. RMCA has types of over a third of the 3,000 species of African freshwater fishes. The African spider collection is also one of the world's most important. Museum collections are presented in permanent exhibitions, with the aim of disseminating scientific knowledge among the general public.

<http://www.africamuseum.be>

The National Botanic Garden of Belgium (NBGB) maintains a vast collection of living plants in greenhouse and outdoor collections (nearly 25,700 accessions belonging to about 17,500 taxa and 3,150 genera) as well as collections of non-living material (Herbarium BR). The vascular plant herbarium contains about 2.5 million specimens, among which are ca. 30,000 nomenclatural types. The herbarium of non-vascular cryptogams contains collections of algae, bryophytes (about 320,000 exsiccatae, of which over 2,000 nomenclatural types), myxomycetes (23,000 exsiccatae, of which 302 nomenclatural types) and fungi (about 145,000 specimens, of which 2,500 nomenclatural types). Focus areas are domestic (about 230,000 specimens from Belgium), the New World and tropical Africa (inter alia ca. 90% of all the botanical material collected by Belgian researchers in Central Africa). Expertise is mainly centred around terrestrial and freshwater ecosystems. The NBG is open to the public, who can enjoy a visit through the indoor and outdoor collections in one of the largest botanical gardens in the world.

<http://www.br.fgov.be/>

2. Universities and other research institutions

Universities. Universities play an important role in the education of taxonomy, from the undergraduate to the postgraduate level. During the past decades however, taxonomic research has been in decline at universities. Most of the 15 Belgian universities and faculties continue to carry out some research and maintain

collections, but expertise and collections are fragmented among taxa and among laboratories. Several universities host zoological museums (e.g. Ghent University, University of Liège, Catholic University of Leuven, Free University of Brussels ULB) or important zoological collections (e.g. Agricultural Faculty of Gembloux), while the majority of universities have herbaria and botanical gardens. One university (University of Liège) maintains an aquarium open to the public. Historically, universities assembled scientific collections as course material (e.g. introduction to systematics). Nowadays, the collections are mainly used for research and for student education (from undergraduate to postgraduate). Attention is increasingly given to the larger public, as more and more zoological museums or botanical gardens offer guided tours for interested parties. The loss of expertise and lack of funding for collections at universities may pose problems on the long term for the care and maintenance of collections, as well as for the establishment of a new generation of taxonomic experts. Examples of university involvement in taxonomic research can be found in the answers to questions 8-18.

Regional research institutes. Some taxonomy-related activities are carried out by regional research institutes, usually as part of broader research and/or monitoring programmes. These institutes include the Flemish Institute for Nature Conservation, the Research Centre for Nature, Forest and Wood of the Walloon Region, the Flanders Marine Institute, the Flemish Agricultural Research Centre and the Walloon Agricultural Research Centre. The Brussels Institute for Management of the Environment generally subcontracts its taxonomy-related research to other institutes. Examples of involvement of regional research institutes in taxonomic research can be found in the answers to questions 8-18.

3. Other actors

Taxonomic societies, naturalist associations and independent experts. There are more than 50 societies and associations that deal with taxonomy-related subjects, or more generally with the identification, inventory and monitoring of species (birds, bats, reptiles, amphibians, butterflies, orchids, etc.). These societies and associations provide support to scientific research and public education. These associations are extremely variable in size, scope, longevity and degree of activity. Independent experts also play an important role for some taxa. Such associations and independent expertise are indispensable to the inventory of biodiversity in Belgium. More information and contact details, are consultable through the database 'Biodiversity Resources in Belgium'. <http://www.br.fgov.be/biodiv/>

Belgian Co-ordinated Collections of Micro-organisms (BCCM): BCCM constitutes a consortium of four complementary research-based culture collections financed by the Belgian Federal Science Policy Office. The distribution of bacteria, filamentous and yeast-like fungi, and plasmids - and in particular, test and reference strains - is an important core activity: over 50.000 well-documented and authenticated strains and over 1.500 plasmids are readily deliverable by BCCM on a world-wide basis. Some 10 unique cDNA libraries are also available. Besides this, BCCM continues to build on its expertise in the fields of isolation, cultivation, characterization, identification and cryopreservation of strains. It also shares and valorises its collective know-how through individual and group training sessions as well as bilateral contract agreements. <http://www.belspo.be/bccm/>

Bio-in-Bel. Bio-in-Bel is a new body set up in 2004 by the Belgian Federal Science Policy Office. It groups two former projects into one: the Belgian Biodiversity Platform (BBPF) and the Belgian node of GBIF (Be-Bif). One of its main tasks is to integrate Belgian biodiversity resources within a unified environment (data and meta-data on biodiversity). Other tasks include advising on biodiversity-related science policy and development of activities that stimulate biodiversity research. <http://www.biodiversity.be/>

**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)	X
b) yes, comprehensive assessments made (please provide details)	
Further comments on country-based taxonomic needs assessments and identification of priorities	
<p>- Between 1998 and 2002, questionnaires were sent to Belgian and foreign experts in view of preparing the country study 'Biodiversity in Belgium' (*). There were questions on the number of species (for a given taxon) found in Belgium, the trends in species numbers, the causes for species increase or decrease, the regions with highest species richness, the existence of species lists, the status of taxonomical knowledge, the number of specialists for the given taxon in Belgium and in neighbouring countries, the existence and localisation of collections, etc. If no Belgian expert could be identified for a target group, the questionnaire was sent to experts in neighbouring countries or even to specialists worldwide. For zoological taxa, 316 questionnaires were returned, of which 194 were completed by Belgian experts and 122 by foreign specialists. A summary, per taxon, of the information gathered via these questionnaires can be found in 'Biodiversity in Belgium'. These questionnaires are not 'taxonomic needs assessments' <i>per se</i>, but provide information for the groups for which answers were received.</p> <p>1. In October and December 2001, two symposia (**) were organised, one on the Belgian flora and one on the Belgian fauna. Their objectives were to evaluate the status of knowledge, assess the needs in taxonomic research and highlight the priorities for future work.</p> <p>- A short overview of Belgian taxonomic capacity has been carried out by the Belgian Biodiversity Platform (now integrated into Bio-in-Bel) for the European Platform for Biodiversity Research Strategy. It has been published as part of a paper called 'Supporting European taxonomy - current state and possible future actions' (EPBRS, 2003).</p> <p>(*) PEETERS, M., FRANKLIN, A. & VAN GOETHEM, J.L. (eds), 2003. Biodiversity in Belgium. Royal Belgian Institute of Natural Sciences, Brussels: 416 pp.</p> <p>(**) PEETERS, M & VAN GOETHEM, J.L. (eds), 2002. Proceedings of the Symposium 'Status and trends of the Belgian fauna with particular emphasis on alien species', Brussels, 14.12.2001. Bulletin of the RBINS, Biologie, Vol. 72 - Supplement. 297 pp.</p> <p>(**) RAPPÉ, G., BUSSCHOTS, K. & ROBBRECHT, E. (eds), 2003. Proceedings of the Symposium 'Botanical Biodiversity and Belgium's expertise', National Botanical Garden of Belgium, Meise, 19-20.10.2001, Scripta Botanica Belgica, 24, 214 pp.</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)	
d) yes, many activities undertaken (please provide details)	X
Further comments on regional taxonomic needs assessment and identification of priorities	
<p>- Active contribution to the paper called 'Supporting European taxonomy - current state and possible future actions' submitted by the European Platform for Biodiversity Research Strategy (EPBRS) to the European Commission in December 2003.</p> <p>- Participation in the position paper 'Biodiversity and Europe: the contribution of taxonomy and the European taxonomic facilities' produced by the Consortium of European Taxonomic Facilities (CETAF). For this paper, some assessment of taxonomic needs has been undertaken.</p> <p>- Needs of GTI focal points have been discussed during the meeting 'Building Capacity for the Global Taxonomy Initiative (GTI) in a larger Europe', organised by Germany on 21-23 June 2004 on the isle of Vilm. The Belgian GTI focal point took part in this meeting and presented how it developed its own activities.</p> <p><i>For a more complete description of the projects and processes mentioned in this answer, please go to the box 'additional information' at the end of the report.</i></p>	
3. Is your country involved in any activities as part of a global taxonomic needs assessment ?	
a) no	X
b) yes (please provide details)	
Further comments on the involvement in the activities for the global taxonomic needs assessment	
<p>Belgium participates as an observer to the meetings of the 'GTI coordination mechanism', supervised by the Secretariat of the CBD, during which taxonomic needs at the global level are discussed. No assessment has been completed yet in this context.</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)	
c) yes, comprehensive programmes developed and many activities undertaken (please provide details)	X
Further comments on public education and awareness programmes and activities	

1. Awareness on the GTI process

The promotion of the GTI work programme itself is mainly undertaken via the Belgian GTI focal point (Royal Belgian Institute of Natural Sciences) and partner institutions (Royal Museum for Central Africa, National Botanic Garden of Belgium) and their capacity building activities on taxonomy. This includes making the GTI more visible both within Belgium (e.g. taxonomic research institutes, federal and regional administrations, etc.) and abroad (including Belgian development cooperation partners).

2. Awareness on taxonomy-related issues

Communication, education and public awareness on taxonomy in the broader sense are principally undertaken

- by the main taxonomic facilities, through their museums and botanic gardens,
- by research institutes or universities having developed museological and educational activities,
- by taxonomic societies and naturalist associations, which play a role in support of scientific research and public education.

Taxonomic facilities. The two main zoological institutions (RBINS, RMCA) host permanent exhibitions, where galleries put the variety of the world's animal species and their biotopes on display. Apart from its permanent galleries, RBINS produces about two temporary exhibitions per year on themes related to the natural world. The main botanical institution (NBG) is located in one of the world's largest botanical parks. Open to the public, the park includes a 'Plant Palace' of 13 greenhouses for tropical collections. The NBG also houses several temporary exhibitions per year, covering botany, horticulture, living resources and interdisciplinary dimensions (e.g. the Arts). All three institutions have educational and awareness activities highlighting the tasks that zoological institutions and botanic gardens undertake for the study of biodiversity and for its in situ and ex situ conservation.

Since January 2004, the RBINS organises 'Tours behind the scenes', to make the public discover the scientific activities and the collections of the Institute. Every month, a different section of the Institute is opened to the public. Visitors have the opportunity to discuss with the scientists and discover the collections. Examples of topics: the world of insects, ants and termites of tropical canopies, mosquitoes that do not bite, historical collections on the North Sea, the origin of modern mammals, birds and migration routes, colour patterns of fishes of African lakes, etc.).

Universities and research institutes. Several universities host zoological museums (e.g. Ghent University, University of Liège, Catholic University of Leuven, Free University of Brussels ULB), while the majority of universities have herbaria and botanical/experimental gardens (e.g. Ghent University, Free University of Brussels ULB). The University of Liège maintains an aquarium that is open to the public. Even though it does not host a museum *sensu stricto*, Gembloux Agricultural Faculty hosts important zoological (insects) collections. Its university grounds also holds an arboretum. Most of these museums and gardens have guided tours, educational activities and/or temporary exhibits on specific issues.

Taxonomic societies, naturalist associations. Special exhibits on plant and animal groups are carried out regularly, as for example on fungi, orchids or insects. Guided tours are often organised by different naturalist societies, e.g. bird watching, herpetofauna.

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	
<p><u>Regional capacity building (EU-funded):</u></p> <ul style="list-style-type: none"> - Support access to taxonomic information/collections: <ul style="list-style-type: none"> o European Network for Biodiversity Information (ENBI). o SYNTHESYS. SYNTHESYS integrates former programmes that granted access to national collections, including ABC (Access to Belgian Collections, 2001-2004) at the Royal Belgian Institute of Natural Sciences. - Support generation of taxonomic information: most EU-funded projects include a capacity-building component. For details, see responses to questions 6 and 8-14. <p><i>For a more complete description of the projects and processes mentioned in this answer, please go to the box 'additional information' at the end of the report.</i></p> <p><u>Global capacity building:</u></p> <ul style="list-style-type: none"> - Support access to taxonomic information/collections: <ul style="list-style-type: none"> o ABIC (African Biodiversity Information Centre), by the Royal Museum for Central Africa. Grants for scientific study visits, for pre-doctoral candidates and recognised taxonomy experts. Operational start in 2001. o DGDC-RBINS capacity building project, by the Royal Belgian Institute of Natural Sciences. Grants for scientific study visits for professionals ranging from technicians & parataxonomists to experts. Funding also available for visits to the Royal Museum for Central Africa and the National Botanic Garden. Operational start in 2004. <p>Both projects are funded by the Belgian Development Cooperation. Since 2004, they are developing synergies.</p> - Support generation of taxonomic information: <ul style="list-style-type: none"> o The Belgian Development Cooperation funds universities, via the Flemish and French Community Interuniversity Councils (VLIR and CIUF), to carry out research projects on biodiversity in developing countries. Some of these research projects include a taxonomic component. o The VLIR and CIUF offer scholarships to participate in international courses (MSc level) held in Belgium. These scholarships are available for developing country applicants. VLIR also provides PhD scholarships to promising graduates of its international courses. Both VLIR and CIUF offer travel bursaries for Belgian and European students registered at a Flemish and French-speaking universities for travel to a developing 	

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

country. For all these programmes, topics do not exclude taxonomy but there must be a strong developmental component.

- o The Belgian Science Policy Office finances bilateral cooperation projects with Central and Eastern European countries and a few other countries such as China. Some of these projects have a taxonomic component.
- o The Belgian Science Policy Office finances the Belgian contribution to GBIF, which includes a capacity-building component.
- o The 'Belgian Coordinated Collection of Micro-organisms' (BCCM) provides capacity building for micro-organisms, through bilateral contract agreements and research projects (e.g. with China).

- Support the training of taxonomists:

- o The DGDC-RBINS capacity building project gives grantees training in taxonomy and collection management.
- o ABIC (African Biodiversity Information Centre), by the Royal Museum for Central Africa. Grants for specialised training sessions (3 months) in various taxonomic groups. Operational start in 2001.
- o FishBase by the Royal Museum for Central Africa. Grants for training in the taxonomy of African freshwater fishes and the use of FishBase. Starting from 2005, five trainees for three months each year.
- o The VLIR and CIUF receive funding from the Belgian Development Cooperation to develop international courses (usually 1 year), international training programmes (usually 1 to 6 months) and short training initiatives (5 days to 2 weeks). Some of these training initiatives specifically targets taxonomy. Examples include the Postgraduate International Nematology Course organised by the Ghent University (<http://allserv.rug.ac.be/~nsmol/pinc.htm>); the MSc in Ecological Marine Management organised by the Free University of Brussels VUB and University of Antwerp (<http://www.ecomama.be/>); the MSc in Aquaculture organised by the Universities of Liège and Namur (<http://www.ulg.ac.be/aacad/prog-cours/sciences/FSCDESIntAqua.html>).
- o The 'Belgian Coordinated Collection of Micro-organisms' (BCCM) provides individual and group training sessions on micro-organisms.

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)	
e) yes, comprehensive activities undertaken for this purpose (please provide details)	X

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

At the European level, there is a multitude of networking initiatives. Belgian institutions took part / currently take part in those listed below.

European networks with a major taxonomic component:

- Consortium of European Taxonomic Facilities (CETAF)
- Synthesis of systematic resources (SYNTHESSYS)
- Species 2000 Europe

European networks on access to biodiversity collections/data:

- European Network for Biodiversity Information (ENBI)
- Biodiversity Collection Access Service for Europe (BIOCASE)

- European Nature Information System (EUNIS)

European networks with a thematic focus:

- Fauna Europaea (FauEu)
- Implementation and networking of large-scale long-term marine biodiversity research in Europe (BIOMARE)
- Marine Biodiversity and Ecosystem Functioning (MARBEF)
- Common Access to Biological Resources and Information (CABRI)
- European Biological Resource Centres Network (EBRCN)
- Creating a long term infrastructure for marine biodiversity research in the European economic area and the newly associated states (MARBENA)

For a more complete description of the projects and processes mentioned in this answer, please go to the box 'additional information' at the end of the report.

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

General:

- Global Biodiversity Information Facility' (GBIF): Belgium is a voting participant in this global network and has established a national node.
- European Network for Biodiversity Information (ENBI): European response to GBIF.
- International Working Group on Taxonomic Databases (TDWG): several Belgian institutions participate actively in this working group.
- Species 2000: Belgium contributes to this global initiative, via its participation in the project Species 2000 Europa / Eurocat: the catalogue of Life.
- Assembling the Tree of Life (ATOL): several Belgian researchers participate to this collaborative Internet project containing information about phylogeny and biodiversity.

Taxon-based:

- Fauna Europaea: Belgium takes part in this EU-funded initiative (via the Royal Belgian Institute of Natural Sciences and others).
- Global Information System on Fishes (FishBase): the Royal Museum of Central Africa, is one of the seven research institutions that form the FishBase consortium. It is also responsible for all information on African fresh- and brackish water fishes.
- Ant'Phipoda: Antarctic Marine Biodiversity Reference Centre, devoted to amphipod

crustaceans, is under development at the Royal Belgian Institute of Natural Sciences. Includes specialised databases that record and organise the information on taxonomy, geographic and bathymetric distribution, ecological and biological characteristics, and bibliography. <http://www.naturalsciences.be/amphi/>

- NeMys: Generic Taxonomical Database System. The database was developed at the Marine Biology Section (Ghent University) mainly with focus on marine Nematoda and Mysida. For both Mysida and Nematoda, information on species worldwide is entered. <http://intramar.ugent.be/nemys/>
- Peperomia.net: the Internet Peperomia Reference, developed at Ghent University. Peperomia.net, currently the only website worldwide, is dedicated exclusively to the plant genus Peperomia. It provides scientific information to botanical researchers as well as general information to novices eager to know more about these plants. <http://www.peperomia.net/>

For a more complete description of the projects and processes mentioned in this answer, please go to the box 'additional information' at the end of the report.

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

Note: studies and inventories are given as examples to the questions below. Their aim is to illustrate the diversity of the Belgian contribution to the Convention's work programmes, **not** to give an exhaustive overview of Belgium's taxonomy-related research. For more information, please consult the following databases: Biodiversity Resources in Belgium (<http://www.br.fgov.be/biodiv/>) and Integrated Marine Information System 2 (<http://www.vliz.be/Vmdcdata/imis2/>).

For questions 8-18, the following abbreviations are used: CLO: Ghent Agricultural Research Centre - CRNFB: Research Centre for Nature, Forests and Wood of the Walloon Region - FuSaGx: Gembloux Agricultural Faculty - FUL: University Foundation Luxembourg (now part of ULg) - FUNDP: University of Namur - IBW: Flemish Institute for Forest and Game Management - IN: Flemish Institute for Nature Conservation - KULeuven: Catholic University of Leuven - LUC: Limburg University Centre - MUMM: Management Unit of the North Sea Mathematical Models (now a RBINS department) - NBGB: National Botanic Garden of Belgium - RBINS: Royal Belgian Institute of Natural Sciences - RMCA: Royal Museum for Central Africa - UA: University of Antwerp - UCL: Catholic University of Louvain - UGent: Ghent University - ULB: Free University of Brussels - ULB - UMH: University of Mons - VLIZ: Flanders Marine Institute - VUB: Free University of Brussels-VUB

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	
Some research projects (listed alphabetically by titles, non exhaustive list):	
- Biodiversity of fishes in Gabon rainforest, 1998-2002, RMCA	

- Biodiversity of litter ant communities of the Ceará (Brazil), 2001-, ULB
- Botanical biodiversity of inselbergs from continental Equatorial Guinea, Central Africa, 1999-, ULB
- Calculating the biodiversity of regions in tropical Africa by means of the moth fauna (Lepidoptera), 1993-, RMCA
- Check-list and redlist of macrofungi in Flanders, 1998-, UGent
- Chorology, taxonomy and systematics of european native orchidaceae, 1970- UCL
- Ecology of Acari (Arachnida) and Collembola (Insecta) in soil and canopy in African habitats, ongoing, RMCA
- Ecology of ground beetles (Coleoptera) in forests in Flanders (Belgium), ongoing, UA, RBINS, IN, IBW, UGent
- Evolutionary biology, taxonomy and biogeography of termites in South America and Papua New Guinea, 1982-, ULB, RBINS
- Ex situ conservation of rare and endangered vascular plant species in Belgium, 2000-, NBGB
- Faunistic study of terrestrial organisms in the Comoro archipelago with emphasis on bird population studies, ongoing, RMCA
- Faunistic, synecological and zoogeographical study of the spiders (Araneae) of Belgium, 1974-, RBINS
- Faunistics of various insect groups and terrestrial molluscs in Belgium, RBINS
- Forest inventory of the Flemish Region (vascular plants, bryophytes), 1996-2000, NBBG
- Identification keys to African spider families and subfamilies (1993-1997) and genera (1997-), RMCA
- Identification of lignified tissues by its anatomical characteristics, ongoing, RMCA
- Integrating bryophytes in the forest management plan: lessons from a grid-mapping in the Forest of Soignes (Belgium), ?-2001, ULg
- Levels and dynamics of intra-specific genetic diversity of tropical trees for conservation and sustainable management, 1997-2001, EU project, Flanders Inter-university Institute for biotechnology
- Phylogeny of the flowering plants with special emphasis on Gentianales, Dipsacales, Ericales and Dioscoreales, 1981-, KULeuven
- Revision of Aspleniaceae (Pteridophyta), ongoing, UGent
- Seed bank of wild plants specific for the phytogeographical districts of Belgium, 1989-, NBGB
- Silviculture and biodiversity of Scots pine forests in Europe, 1997-2000, EU project, UGent
- Study of the diversity of various insect communities in tropical environments, rainforests in particular, ongoing, RBINS
- Study of the spider fauna with respect to the restoration of tropical rainforest in Ivory Coast, 1993-, RMCA
- Systematics and ecology of Basidiomycetes, in particular the Gasteromycetes and lignicolous fungi, in Europe and Papua-New Guinea, ongoing, ULg
- Systematics and taxonomy of groups of macrofungi in tropical South-East Asia, 2000-, UGent
- Systematics, taxonomy, ecology and ethnomycology of macromycetes (Fungi) of tropical Africa, 1997-, NBGB, UGent
- Taxonomic revision and phylogeny of several (20+) genera in the family Cyperaceae, 1974-, UGent
- Taxonomic revision and phylogeny of the genus Peperomia worldwide, 2002-, UGent
- Taxonomic revision of the flora of Central and West Africa: Convolvulaceae, Orchidaceae, Poaceae, Marantaceae, Dioscoreaceae, Eriocaulaceae, Burseraceae, Anthericaceae, ongoing, ULB
- Taxonomy and phylogeny of birds in central and West Africa, 1974-, RMCA
- Taxonomy and systematics of reptiles and amphibians of tropical forests, ongoing, RBINS
- Taxonomy of orchids and other monocotyledons in Central Africa, ongoing, NBGB
- Taxonomy of various groups of insects in Africa (Coleoptera, Diptera, Hymenoptera),

ongoing, RMCA - Woodland bryophytes of lowland Belgium, 1997-2000, NBGB - XYLOBIOS: Diversity, ecology and roles of saproxylic organisms in Belgian deciduous forests, 2000-2005, CRNFB, FuSaGx, UCL, RBINS	
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	
Some research projects (listed alphabetically by titles, non exhaustive list): - Belgian shipwrecks: hotspots for marine biodiversity (BEWREMABI project), 2003-2006, UCL, UGent, RBINS, RBINS-MUMM, VLIZ - Biodiversity and taxonomy of marine alien species, ongoing, RBINS-MUMM - Biodiversity of 3 representative groups of the Antarctic Zoobenthos (BIANZO), 2002-2006, RBINS, ULB, ULg, UGent - Biodiversity of crustacean taxocoenoses in the Southern Ocean, 1996-2000, RBINS - Biodiversity of microbial mats in Antarctica, 1998-2001, EU project, ULg - Biogeography and systematics of Halymeniaceae in the Indian Ocean, 2000-2003, UGent - Biology of marine organisms in the Indian Ocean, 1992-1995, UGent, VUB, LUC, KULeuven - Biology of Sponge Natural Products, 1998-2001, EU project, ULB - Changes in Bacterial Diversity and Activity in Mediterranean Coastal Waters as Affected by Eutrophication, 1996-1999, EU project, ULB - Commercial fish and European estuaries - priorities for management and research, EU project, 1996-1999, UGent - Crustacea from the Yucatan Peninsula (Mexico), 1995-, RBINS - Ecological research on Diptera in the Belgian coastal dunes, ongoing, RBINS - European Marine Genetic Diversity (EUMAR), 2002-2004, EU project, RBINS - European microbiology of particulate systems, EU project, 1994-1996, ULg - Implementation and networking of large-scale long-term marine biodiversity research in Europe (BIOMARE), 2000-2002, EU project, UGent - Marine Biodiversity and Ecosystem Functioning (MARBEF), 2004-2008, UGent, VLIZ - Marine ostracods of a coral island in Papua New Guinea, 1999-2002, KULeuven - Microphytobenthos on the Belgian coast and the Scheldt estuary: a systematic-ecological study, 1991-1993, UGent - Molecular diversity of marine invertebrates, 2000-2004, UGent - Molecular phylogeny of invertebrates, 1994-1999, UA, UGent, RBINS - Molecular systematics and phylogeny of holothuroids, 2000-2002, VUB - Morphology, taxonomy, phylogeny and systematics of marine freeliving Nematoda, ongoing, RBINS - Study of Diatoms and Desmidiaceae of Papua New Guinea, 1990-1993, UGent - Systematic study of algae, fungi, plants and invertebrates in the Indo-Pacific Region, 1996-1999, UGent, RBINS - Systematic-ecological study of the intertidal microphytobenthos, 1993-1995, UGent - Systematics and evolutionary biology of marine macro-algae in the Indo-Pacific	

<p>Region, 2001-2004, UGent</p> <ul style="list-style-type: none"> - Taxonomic and ecological research on the plankton communities of Papua New Guinea and Australia, 1993-1996, UGent - Taxonomic database of the North Sea meiofauna, 2001-2002, UGent - Taxonomic, phylogenetic and biogeographic studies of Plantae, Fungi and Protoctista, 1998-2000, UGent - Taxonomy and sustainable use of Holothuroidea in the Comoros, RMCA, RBINS - Taxonomy and zoogeography of holothuroids, 1985-, RBINS - Taxonomy of Bacillariophyta, Nematoda, Crustacea, Rotifera, 2000-2003, UGent, RBINS - Taxonomy, ecology and anatomy of selected Gastropoda in Papua New Guinea, ongoing, RBINS - Taxonomy, phylogeography, population and eco-genetics of European marine and terrestrial molluscs, ongoing, RBINS - Use of sclerosponges as biorecorders of environmental changes, ongoing, RBINS 	
<p>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?</p>	
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)	
<p>Further comments on taxonomic support for implementing the programme of work on dry and sub-humid lands biodiversity</p>	
<p>Some research projects (listed alphabetically by titles, non exhaustive list):</p> <ul style="list-style-type: none"> - A world monograph of the lichen genus Gyalectidium (Gomphillaceae), published 2001, ULg - Diversity patterns of organisms in ephemeral rock pools in arid regions in USA, Botswana and Australia, 2003-, KULeuven - Diversity patterns of organisms in ephemeral wetlands in South Africa, 2003-, KULeuven - Ethnobotanical survey of the Namib desert, 1991-1992, UGent - Flora and vegetation of the deserts of Iran, 1972-1992, NBGB - Mycorrhizal symbiosis of trees, mainly in Europe and Africa, 1968-, FUL - Non-marine Ostracoda (Crustacea) of southern Africa, 1987-, RBINS - Plant and insect diversity and ecological relationships in Western Mediterranean area (Calypso project), 1993-1998, FuSaGx, ULB, ULg, UMH - Plant diversity in grassland and on field margins in Tunisia, 1996-2005, UGent - Taxonomy and cladistics of spiders (Araneae), mainly from Africa, 1984-, independent expert at RMCA - Taxonomy and eco-geography of lichenised and lichenicolous fungi, ongoing, ULg - Taxonomy and ecological biogeography of large branchiopods (Crustacea) from ephemeral pools in arid and semi-arid areas, 1987 - , KULeuven - Taxonomy, behaviour and rearing of mites (Acari) associated with stored seeds in northern Iran , 1997-2000, RBINS 	
<p>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?</p>	

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>Some research projects (listed alphabetically by titles, non exhaustive list):</p> <ul style="list-style-type: none"> - Biodiversity and human impact in shallow lakes, 2000-2003, EU project, KULeuven, UGent - Biodiversity of fishes in Gabon rainforest, 1998-2002, RMCA - Biodiversity of microbial mats in Antarctica, 1998-2001, EU project, ULg - Biodiversity of the freshwater and brackish water fish fauna from Cameroon, 1993-1997, RMCA - Biodiversity, taxonomy and biogeography of rotifers (Rotifera), ongoing, RBINS - Biodiversity, taxonomy and phylogeny of catfishes from Africa and SE Asia, 1997-2002, RMCA - Database of freshwater molluscs in Belgium, 1989-, RBINS - Diversity and speciation of Ostracoda (Crustacea) in ancient lakes, 1990-, RBINS - East African fish diversity project, 1999-2004, RMCA - Ecology and faunistics of Chironomidae (Diptera, Insecta), 1976-, RBINS - Fish biodiversity in the coastal zone in West Africa, 2000-2002, RMCA - Fish biodiversity on Mayotte island, 1993-2001, RMCA - Freshwater algae of Belgium, ongoing, NBGB - Freshwater algae of tropical regions, ongoing, NBGB - Lake Baikal (Chironomidae, Oligochaeta, Amphipoda, etc.), 1990-, RBINS - Lake Malawi/Nyasa/Niassa Biodiversity Conservation Project, 1996-2000, RMCA - Morphology and systematics of copepods (Crustacea) of Belgium, 1988-, RBINS - Multidisciplinary research on the diversity of fishes from the Congo Basin; the fishes of the Lower Congo and the Malebo Pool, 2004-2008, RMCA - Protocols for the Assessment and Conservation of Aquatic Life In the Subsurface (PASCALIS), 2002-2004, EU project, RBINS - Structure and functioning of aquatic communities in inland waters in USA, Botswana, South Africa, Zimbabwe, Ethiopia, Bolivia and Australia, ongoing, KULeuven - Study of aquatic bryophytes for the survey and monitoring of water quality, ongoing, ULg - Support to the Population Biology Laboratory of the Marien Ngouabi University in Brazaville for the study of biodiversity and conservation of freshwater fishes of Congo-Brazaville, 2002-2006, RMCA - Taxonomic, phylogenetic and biogeographic studies of Plantae, Fungi and Protoctista, 1998-2000, UGent - Taxonomy and systematics of cichlids (Pisces) from Lakes Malawi/Niassa, Tanganyika, and Kivu, ongoing, RMCA, RBINS - Taxonomy, phylogeny and evolution of aquatic mosses, ongoing, ULg, UCL - Taxonomy, systematics and ecology of aquatic Oligochaeta (Annelida), 1991-, RBINS - Trophic ecology of the demersal fish community of Lake Malawi/Niassa, Central Africa, 1998-2002, EU project, RMCA, RBINS - Zoological inventory of the river Meuse (W-Europe) and its tributaries, ongoing, FUNDP 	

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)	
d) yes, comprehensive activities undertaken (please provide details)	X
Further comments on taxonomy-related activities for the implementation of the programme of work on agricultural biodiversity	
<p>Some research projects (listed alphabetically by titles, non exhaustive list):</p> <ul style="list-style-type: none"> - ACONITE (Association pour la Cartographie d'Organismes Naturels et les Inventaires Taxonomiques et Ecologiques) - Study of the Apoidea in their role of pollinators, 2004-, FuSaGx, UMH, CNRFB - Biodiversity of wild and semi-domesticated species of Vasconcellea in Ecuador, 1999-2003, UGent - Development of rapid novel molecular and cellular tools for the assessment and evaluation of genetic diversity in plants, 1993-1997, EU project, KULeuven - Diversity patterns of zooplankton communities in pools in an agricultural landscape, 2003-, KULeuven - Ecology of Acari (Arachnida) and Collembola (Insecta) in soil and canopy in African habitats, ongoing, RMCA - European crop wild relative diversity assessment & conservation forum, 2002-2005, EU project, FuSaGx - Evaluation and use of beneficial entomofauna in vegetable open fields, ongoing, FuSaGx - Fluorescent Pseudomonads (Bacteria) in agricultural applications, 1994-1999, VUB - Germplasm collection, characterisation and crop development of locally used fruit species in southern Ecuador, ongoing, UGent - Morphology, taxonomy, phylogeny and systematics of plant parasitic Nematoda, ongoing, RBINS - Musa germplasm collection for International Network for the Improvement of Banana and Plantain (INIBAP), ongoing, KULeuven - Pathogenic nematodes (Invertebrata) in arable crops in Belgium, 1987-, CLO - Phaseoleae - Phaseolinae seed collection - IPGRI base collection for wild Phaseolus and Vigna species, 1988-, NBGB - Systematics and biogeography of bees (Hymenoptera Aculeata, Apoidea), ongoing, UMH - Systematics and host plant specificity of African fruit flies (Diptera, Tephritidae), ongoing, RMCA - Taxonomy and identification of Bacillus (Eubacteria) and relatives, 1989-, UGent - Taxonomy and systematics of Braconidae (Ichneumonoidea, Hymenoptera, Insecta) from tropical and palaeartic areas, 1995-, FuSaGx, RBINS - Taxonomy, adaptations, habitat and behaviour of oribatid mites (Oribatida); developmental stability in the spider mite Tetranychus urticae (Prostigmata), 1972-, RBINS - Taxonomy, behaviour and rearing of mites (Acari) associated with stored seeds in northern Iran, 1997-2000, RBINS - The soil fauna: the other last biotic frontier, ongoing, UCL 	

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>Some research projects (listed alphabetically by titles, non exhaustive list):</p> <ul style="list-style-type: none"> - Biodiversity and origin of spider fauna (Araneae) at high latitudes and altitudes in Eurasia, 1995-1997, EU project, RBINS - Biodiversity of Taita Hills in southeastern Kenya, ongoing, UA, RMCA - Diversity of benthic diatom communities in New Zealand alpine aquatic systems, 2001-, UGent - Ecology and phytogeography of alpine vegetations (Jura, Alps, Pyrenees, Sierra Nevada, Corsica, Peloponnesos), 1965-, FUNDP - Myxomycetes (Fungi) in Western Europe, especially Belgium and nivicolous species in the French Alps, 1986-, Royal Antwerp Mycologists Circle - Taxonomy, phytosociology and phytochorology of the mountainous massif Jebel Uweinat (desert of Libya), 1964-2001, NBGB - Taxonomy and phylogeny of the Andean scirpoids (Cyperaceae), 1999-2004, UGent 	
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>Some research projects (listed alphabetically by titles, non exhaustive list):</p> <ul style="list-style-type: none"> - Conservation of bryophytes in Flanders (Belgium) with special emphasis on Red List, 1990-2010, NBGB - Diversity and abundance of bryophytes, and applications to the conservation and management of ecosystems, ongoing, ULg - European crop wild relative diversity assessment & conservation forum, 2002-2005, EU project, FuSaGx - Inventory of the freshwater and brackish water fish fauna of the protected nature reserve Mayombe in Congo-Brazzaville, 1991-2003, RMCA - Monitoring of flora and vegetation in managed nature reserves in the Zoniën forest (Belgium), 1991-1998, VUB - Monitoring of species diversity and vegetation development in strict forest reserves as important reference tools for nature-based forest management, ongoing, IBW 	

- Phytodiversity in relation with ecological and patrimonial values, 2002-2006, UCL
- SADC/GEF Lake Malawi/Nyasa/Niassa Biodiversity Conservation Project, 1996-2000, RMCA
- Seed bank of wild plants specific for the phytogeographical districts of Belgium (seed samples of representative of rare or endangered species of the different phytogeographical regions of Belgium are stored at -20 C. This ex situ conservation is considered to contribute to the global strategy of nature conservation), 1989-, NBGB
- Survey and monitoring of all terrestrial life in Flanders (Belgium), 2000-, IN
- Survey and monitoring of sites of biological importance (SGIB) in Wallonia (Belgium), ongoing, CRNFB
- Survey of endemic birds in protected areas of Comoro Republic and Mayotte, 1985-, RMCA

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	
No strategy on ABS yet available. ABS components will be included in the National Biodiversity Strategy (still under development).	
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	

Research programmes mainly, at this stage. Some examples:

- Alien crustacean and molluscan species in Belgium, ongoing, RBINS
- Alien fruit fly species (Diptera, Tephritidae) in East Africa, ongoing, RMCA
- Floristics of non-indigenous vascular plants (especially weeds and invasive taxa) in Europe, ongoing, UGent
- Freshwater macrozoobenthos biodiversity and assessment of the biological quality of watercourses in Wallonia, 1990-, CRNFB
- Invasive bryophytes in Belgium, 1990-2010, NBGB
- Invasive Plant species in Belgium: patterns, processes and monitoring (INPLANBEL), 2003-2006, FuSaGx, NBGB, ULB, UA
- Invasive species of freshwater molluscs in Belgium, 1996-, RBINS
- Marine invertebrate fauna of W-Europe, especially Cirripedia and Molluscs; alien species, 1973-, RBINS-MUMM
- Phylogeography, population and eco-genetics of European marine and terrestrial molluscs, ongoing, UA
- Taxonomy and ecology of weeds, especially Polygonaceae, 1987-, ULB

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	X
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

Some research projects (listed alphabetically by titles, non exhaustive list):

- Database concerning traditional veterinary medicinal plants in Sub-Saharan Africa, 1994-, UCL
- Ethnobotany (medicinal plants, vernacular names) and tropical horticulture in Central Africa, ongoing, NBGB
- Ethnomycology in Africa, UGent
- Ethnomycology, especially of West and Central Africa, 1973-, FUL
- Germplasm collection, characterisation and crop development of locally used fruit species in southern Ecuador, ongoing, UGent
- Inventory of wild edible fruits in the savanna of northern Ivory Coast, 1996-2002, FuSaGx
- Medical ethnobotany of Quechua farmers and Yuki-indians in Cochabamba, Bolivia: medicinal plant diversity, medicinal plant use and indigenous classification, UGent
- Medicinal plants from the forest region of Dja as suspected malaria antagonists (Cameroun, Central Africa), 1999-, ULB
- Systematics, taxonomy, ecology and ethnomycology of macromycetes (Fungi) of tropical Africa, 1997-, NBGB
- Valorisation of medicinal plants in Africa, 1986-, ULB

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	
c) yes, some programmes in place (please provide details)	
d) yes, comprehensive programmes in place (please provide details)	X
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	
<p>Monitoring programmes in place for various groups of organisms. This monitoring is carried out at the regional level. In addition, research projects target the use of specific taxa as bio-indicators. Some research projects (alphabetical, non exhaustive list):</p> <ul style="list-style-type: none"> - Ants in leaf-litter as bio-indicators, 1998-, RBINS - Biodiversity in shallow lakes (taxon diversity, genetic diversity, resting egg banks), 2000-2003, KULeuven - Biometry of seabirds and bio-monitoring of seabird mortality as an indicator of oil pollution, ongoing, IN, RBINS-MUMM - Biomonitoring, faunistics, population genetics, bio-indicator research on carabid beetles (Carabidae, Coleoptera) in Belgium, with implications for nature conservation, ongoing, RBINS - Birds as bioindicators in Albertine Rift, Comoros, and other African Countries, 1985-, RMCA - Butterflies (Lepidoptera) as indicators for evolution in the tropical rainforest of East and West Africa, 1993-, RMCA - Development of indicators and indices for forest plant species diversity and the consequences of fragmentation on forest plant species in Flemish forests (Belgium), 1998-2001, KULeuven - Diatom indices in water quality assessment and biomonitoring of lotic freshwaters, 1980-, UCL - Dolichopodidae (Diptera) as bio-indicators in nature conservation, 1990-, RBINS - Forest parasitoids as biodiversity indicators in spruce plantations, 1998-, ULB - Inventarisation and identification of invertebrates as ecological indicators in Flemish forest reserves, 2000-2002, RBINS - Invertebrate animals as bio-indicators in Flanders (Belgium), ongoing, IN - Sclerosponges (Porifera) as biorecorders of environmental changes, ongoing, RBINS - Spiders as bio-indicators within the framework of nature conservation in Flanders, 1986-, IN - Structural and functional biodiversity of copepod (Crustacea) communities on the Belgian Continental Shelf (North Sea), 1998-2003, UGent - Study of aquatic bryophytes for the survey and monitoring of water quality, ongoing, ULg - Taxonomy and phylogeny of birds in central and West Africa, 1974-, RMCA - Trophic ecology of the demersal fish community of Lake Malawi/Nyassa, Central Africa. INCO-DC project 1998-2002, RMCA, RBINS 	

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

Conclusions

Belgium has an excellent infrastructure for taxonomy, not only in the major taxonomic institutions but also at universities and regional research institutes. The country possesses major collections and comprehensive libraries, many of which are of great historical importance. In the past few years, Belgium has also set up a number of capacity building activities in the field of taxonomy, therefore taking a rather proactive role in the implementation of the Global Taxonomy Initiative.

Despite the availability of a well-developed taxonomic infrastructure, funding for taxonomic research has declined over the years, generally to the profit of other scientific disciplines. This has led to a decrease in research at the roots of biodiversity conservation. It has also placed the reference collections of natural history specimens at risk.

Another worrying factor is the precarious nature of the taxonomic expert base. Belgian research increasingly relies on an aging taxonomic community, with permanent staff often over 50 years old and with a significant input by retired researchers and skilled amateurs who frequently have to self-fund their research. Finding enthusiastic young people with an interest in becoming taxonomists is probably not so hard. Major stumbling blocks are insufficient training opportunities, insufficient funding for research and a lack of long-term professional prospects.

Increased funding for basic taxonomic research and for the management of collections (including their transposition into digital form) is urgently needed. Training a new generation of young researchers and curators is also essential, not only in the more 'popular' disciplines of molecular systematics and bioinformatics, but also in the traditional approaches such as morphology and anatomy. It is only through those means that the loss of taxonomic expertise will be halted. The correct identification, description, classification and monitoring of biological diversity is an important factor - too often undervalued in the establishment of national policies for biodiversity - that allows successful and effective implementation of the Convention on Biological Diversity and of other international agreements such as CITES.

Major international and European initiatives and processes mentioned in the report (by alphabetical order)

Biodiversity Collection Access Service for Europe (BIOCASE), 2001-2004: three-year research project funded by the European Commission, EESD Programme, to establish a web-based information service providing researchers with unified access to biological collections in Europe while leaving control of the information with the collection holders. Its objectives are to develop common procedures to network and share collection data across European biological collections, to implement a sustainable and expandable Biological Collection Access Service for Europe, to create an innovative information system with measurable amounts of data. The Belgian participant in the project is the National Botanic Garden of Belgium via its project 'Biodiversity Resources in Belgium' (BIODIV). <http://www.biocase.org/>

Common Access to Biotechnological Resources and Information (CABRI), 1996-1999: CABRI is an online service where users can search a number of European Biological Resource Centre catalogues. The catalogues may be searched independently, or as one, and the located materials ordered online or by post. The Belgian partner is the Belgian Coordinated Collections of Micro-organisms. <http://www.cabri.org/>

Consortium of European Taxonomic Facilities (CETAF): CETAF is a networked consortium of scientific institutions in Europe formed to promote training, research and understanding of systematic biology and palaeobiology as well as access to the information and expertise of its member institutions, by improving the efficiency of their taxonomic facilities through co-operation. In support of

its aims, CETAF will act as a forum for the exchange of information and policies, working towards co-ordinated activities. It has produced a position paper: 'Biodiversity and Europe: the contribution of taxonomy and the European taxonomic facilities'. CETAF institutions worked together to set up the project 'SYNTHESIS' under the 6th Framework Programme for Research of the European Union. The Belgian representatives to CETAF are the Royal Belgian Institute of Natural Sciences, the Royal Museum for Central Africa and the National Botanic Garden of Belgium. <http://www.cetaf.org>

Creating a long term infrastructure for marine biodiversity research in the European economic area and the newly associated states (MARBENA), 2002-2005: MARBENA aims to develop a network and open its activities and engages cooperation with any interested partner, including museums of natural history, universities and government laboratories; to create a long-term research infrastructure, to create visibility for marine biodiversity issues and maintain the network via: communication with other initiatives, internet, (electronic) conferences, workshops, and projects. The Belgian partner is the Flanders Marine Institute. <http://www.vliz.be/marbena>

European Biological Resource Centre Network (EBRCN), 2001-2004: The objectives of EBRCN are to: establish a network of biological resource centres; develop the European Standard for BRCs based on existing collection quality management systems; establish a framework to maximise complementarity and minimise unnecessary duplication among European BRCs; introduce new techniques in information technology to the EBRCN to add value to current catalogue information and enhance accessibility; collate and disseminate information on legislation on access to, and distribution of, living organisms and health and safety to BRCs and users through the EBRCN central web site. The Belgian partner is the Belgian Coordinated Collections of Micro-organisms. <http://www.ebrcn.org/>

European Nature Information System (EUNIS): this European information system is developed and managed by the European Topic Centre for Nature Protection and Biodiversity (ETC/NPB in Paris) for the European Environment Agency (EEA) and the European Environmental Information Observation Network (EIONET). EUNIS consists of a central unit integrating data models on species, habitats and sites; several secondary databases which are managed by different partners; and an increasing number of satellite databases. This data is used for environmental reporting and for assistance to the NATURA2000 process (EU Birds and Habitats Directives) and coordinated to the related EMERALD Network of the Bern Convention. Belgium contributes to EUNIS via its EEA national focal point and its regional nature & environment research centres (Flemish Institute of Nature Conservation, Walloon Research Centre for Nature, Forest and Wood, Brussels Institute for the Management of the Environment). <http://eunis.eea.eu.int/>

European Network for Biodiversity Information (ENBI), 2003-2006: ENBI is a thematic network funded by the European Union for a period of three years with the aim of coordinating Europe's efforts in the broad field of biodiversity information, and providing an integrated contribution to the Global Biodiversity Information Facility (GBIF). Work package 5 'Cooperation of pan-European checklist and Species bank' database projects' has for one of its objectives to identify the gaps in taxonomic coverage, and associated data, and identify ways of filling them. Belgium is member of several of the ENBI work packages. The Belgian representatives in ENBI are the Royal Belgian Institute of Natural Sciences, the Royal Museum for Central Africa and the National Botanic Garden of Belgium. <http://www.enbi.info/>

European Platform for Biodiversity Research Strategy (EPBRs), 2001-2005: The European Platform for Biodiversity Research Strategy is a forum for scientists and policy makers to ensure that research contributes to halting the loss of Biodiversity by 2010. The participants in the EPBRs Meeting held under the Italian Presidency in Florence, 20-24 November 2003 expressed their concern that taxonomy has not been recognized among the priorities of 6th Framework Programme for Research (FP-6) of the European Union. They prepared a paper called 'Supporting European taxonomy - current state and possible future actions' that was submitted to the European Commission. The Belgian representative to the EPBRs is the Belgian Biodiversity Platform. It is also in charge of the secretariat of the EPBRs. <http://www.bioplatform.info/EPBRs.htm>

European Register of Marine Species (ERMS), 1998-2000: A 'Concerted Action' project funded under the European Union MAST research programme to produce a register of marine species in Europe, linked with a bibliography of identification guides, register of taxonomic experts, locations of collections of reference specimens, and an Information Pack on European marine biodiversity.
<http://www.vliz.be/vmdcdata/erms/index.php>

Fauna Europaea, 2000-2004: this project, funded under the 5th Framework Programme for Research of the European Union for a period of four years (2000-2004), was set up to assemble a database of the scientific names and distribution of all living multicellular European land and fresh-water animals. Other activities include the networking of researchers, database custodians, and users to build and maintain the database infrastructure that will promote continuity in the collation of validated taxonomic data, and the production of an overview of the state of art with respect to our knowledge and expertise (including gap analysis).
The Belgian partner in the project is the Royal Belgian Institute of Natural Sciences. <http://www.faunaeur.org/>

Global Biodiversity Information Facility (GBIF): the mission of GBIF is to make the world's primary data on biodiversity freely and universally available via the Internet. <http://www.gbif.org>

Global Information System on Fishes (FishBase): FishBase is a global information system with all you ever wanted to know about fishes. It is a relational database with information to cater to different professionals such as research scientists, fisheries managers, zoologists and many more. FishBase on the web contains practically all fish species known to science. It was developed at the WorldFish Center in collaboration with the Food and Agriculture Organization of the United Nations (FAO) and many other partners, and with support from the European Commission (EC). Since 2001 FishBase is supported by a consortium of seven research institutions, which includes a Belgian one: the Royal Museum for Central Africa. The Museum is responsible for all information concerning African fresh- and brackish water fishes <http://www.fishbase.org>.

International Network for the Improvement of Banana and Plantain (INIBAP): This network was created in 1985, with the objectives of creating partnerships and supporting research carried out by its partners in both developing and industrialized countries. Many of the producing countries have limited research capacity, but participation in regional networks supported by INIBAP helps them to make the best use of available resources. INIBAP has established the world's largest *Musa* germplasm collection, which is located at KULeuven. INIBAP has put in place a system for the safe movement of these varieties, and this material is distributed freely worldwide.

International Working Group on Taxonomic Databases (TDWG): TDWG is a not for profit scientific and educational association, affiliated to the International Union of Biological Sciences, formed to establish international collaboration among biological database projects so as to promote the wider and more effective dissemination of information about the World's heritage of biological organisms for the benefit of the world at large. To achieve its goals, TDWG (a) develops, adopts and promotes standards and guidelines for the recording and exchange of data about organisms, (b) promotes their use through the most appropriate and effective means, (c) acts as a forum for discussion through holding meetings and through publication such as a newsletter.

Belgian Institutional Members are the Belgian Biodiversity Information Facility (BeBiF), the Belgian Co-ordinated Collections of Micro-Organisms (BCCM) and the National Botanic Garden of Belgium. One Belgian personal member also participates in TDWG (Dr Claude De Broyer, Royal Belgian Institute of Natural Sciences).
<http://www.tdwg.org/>

Marine Biodiversity and Ecosystem Functioning (MARBEF), 2004-2008: The network aims at integrating research efforts by forming a group of marine scientists and institutes and creating a virtual European institute with a long-term research programme and dedicated links with industry and the public at large. This involves besides coordination of research the training, exchange and outreach activities in several relevant fields of science, including marine ecology and biogeochemistry, fisheries biology, taxonomy and socio-economic sciences. Belgian partners are the Flanders Marine Institute and UGent. <http://www.marbef.org/>

Species 2000 is a "federation" of database organisations working closely with users, taxonomists and sponsoring agencies. The thrust of the Species 2000 plan is to create an array of participant global species databases covering each of the major groups of organisms. Each database will cover all known species in the group, using a consistent taxonomic system. Species 2000 has the objective of enumerating all known species of organisms on Earth (animals, plants, fungi and microbes) as the baseline dataset for studies on global biodiversity. <http://www.sp2000.org/>

Species 2000 Europa (official name: The Catalogue of Life: Biodiversity Resource and e-Science Gateway), 2003-2006: the project will establish the infrastructure to collate and sustain a comprehensive catalogue of organisms, using existing databases from taxonomic experts around Europe. It will display a uniform and validated synonymic checklist for those groups of plants, animals, fungi and micro-organisms currently available, including indigenous and non-indigenous species in Europe. It will operate as a desktop biodiversity resource on the Internet and GRID, as an e-science gateway, serving professionals and members of the public, and serving national, European and global biodiversity agencies including GBIF. The Belgian participant in the project is the National Botanic Garden of Belgium via its project 'Biodiversity Resources in Belgium' (BIODIV). <http://sp2000europa.org/>

Synthesis of systematic resources (SYNTHEsys), 2004-2008: the project aims to create an integrated European infrastructure for researchers in the natural sciences. It will bring together resources for scientific research, consisting of collections, institute facilities and expertise. The five-year grant comprises two parts:

1) Access: funding is available to provide scientists based in European Member and Associated States to undertake short visits to utilize the infrastructure (namely the collections, staff expertise and analytical facilities) at one of the 20 partner institutions for the purposes of their research.,

2) Networking Activities: comprises a series of five Networking Activities (Complementarity, Standards, Databases, New collections, New analytical methods).

The Belgian participants to SYNTHEsys are the Royal Belgian Institute of Natural Sciences, the Royal Museum for Central Africa and the National Botanic Garden of Belgium. <http://www.synthesys.info>

The tree of Life: a collaborative Internet project containing information about phylogeny and biodiversity. It is produced by biologists from around the world. On more than 2600 World Wide Web pages, the Tree of Life provides information about the diversity of organisms on Earth, their history, and characteristics.

Belgian participants are: Dr Michel Milinkovitch, Free University of Brussels (Mammals) and Dr Ernest Schockaert, Limburgs Universitair Centrum (Platyhelminthes). <http://tolweb.org/tree/>
