

Third National Report of Belgium to the Convention on Biological Diversity

C. ARTICLES OF THE CONVENTION

Article 12 - Research and training

88. On Article 12(a), has your country established programmes for scientific and technical education and training in measures for the identification, conservation and sustainable use of biological diversity and its components?

a) No

b) No, but programmes are under development

c) Yes, programmes are in place (please provide details below)

X

Further information on the programmes for scientific and technical education and training in the measures for identification, conservation and sustainable use of biodiversity.

Biodiversity-related courses such as taxonomy, systematics, ecology and alike are commonly taught at universities. Numerous administrations and non-governmental organisations organise courses for nature guides.

The **KULeuven**, supported by IPGRI and the EU, provides training on cryopreservation, *i.e.* fundamentals of cryobiology and plant genetic resources, and more technical information on cryopreservation protocols and analytical techniques.

The **Institute of Nature Conservation** participates in the EU FP6 Network of Excellence 'ALTER-Net'. It has the leadership of a work package on dissemination of knowledge.

Walloon Region:

- biodiversity training for officers of the Nature and Forest Division (among others on species and habitats of community importance due to the Birds and Habitats Directives);
- the 'Réseau Idée' tries to connect all the actors involved with environmental education: teachers, animators, trainers, parents, éco-councillers, etc. The network enables frequent contacts between these actors and a better distribution of the information. It tries to valorise existing pedagogical projects and instruments, training possibilities and the centres for environmental education;
- the Regional Centres for Environmental Education (CRIE) provide a public service on environmental information, sensibilisation and training, in a sustainable development perspective. The activities of the CRIE are also directed towards adults such as teachers, animators, nature guides, officers or foresters;
- training provided by nature associations such as Natagora, for example on ornithology.

Brussels Capital Region: officers and technical agents (forest and nature technical agents) of the BIME receive regularly courses and training sessions in relation to biodiversity and management of natural sites.

Several nature information and education centers are given information sessions and training courses to a large public (children and adults) for sensitisation on sustainable attitudes and management and use of biological resources.

The **Belgian Development Cooperation** supports:

- the African Biodiversity Information Centre (ABIC) housed at the Royal Museum for Central Africa which organises training internships with a focus on taxonomy and biodiversity for students from developing countries (started in 1991);
- the DGDC-RBINS capacity building project which provides grantees from developing countries with training in taxonomy and collection management (started in 2004);
- 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.

The Belgian Development Cooperation also supports, through an UNESCO programme, the Regional

Post-Graduate Training School on Integrated Management of Tropical Forests (ERAIFT), based in DRC (\pm €200,000/year). The ERAIFT aims at providing an education that will allow graduates to contribute to human development that is sustainable and respectful of the environment, particularly tropical forests.

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 target 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 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>).

The '**Belgian Coordinated Collection of Micro-organisms**' (BCCM) provides individual and group training sessions on micro-organisms.

89.  On Article 12(b), does your country promote and encourage research which contributes to the conservation and sustainable use of biological diversity?

| | |
|---------------------------------------|---|
| a) No | |
| b) Yes (please provide details below) | X |

Further information on the research which contributes to the conservation and sustainable use of biodiversity.

The second Scientific Plan for a Sustainable Development Policy (2000-2005), supported by the **Federal Science Policy**, devotes about 15% of its total budget (~ €10,000,000) to biodiversity research. Research projects contribute to the conservation and sustainable management of terrestrial and freshwater ecosystems of temperate regions, the North Sea and the Austral Ocean.

The main objectives of the programme are:

- to better understand the links between biological diversity, the structure and the functioning of ecosystems and the impacts of human and environmental threats on biodiversity;
- to develop decision/management support tools for the monitoring and assessment of biodiversity and methods for conservation, restoration and sustainable use of biodiversity.

Fifteen network projects are supported (involving 60 research teams in a multidisciplinary context):

- 1) Climate variability as recorded in Lake Tanganyika (CLIMLAKE), 01.12.2000-28.02.2005.
- 2) Invasion and biodiversity in grasslands and field borders, 01.12.2000-28.02.2005.
- 3) XYLOBIOS: Diversity, ecology and roles of saproxylic organisms in Belgian deciduous forests, 01.12.2000-28.02.2005.
- 4) Linking dispersal, connectivity, and landscape structure to produce habitat evaluation/restoration guidelines, 01.12.2000-28.02.2005.
- 5) Biodiversity of 3 representative groups of the Antarctic Zoobenthos (BIANZO), 01.02.2002-30.04.2006.
- 6) Higher trophic levels in the Southern North Sea (TROPHOS).
- 7) Conservation and restoration of fragmented biodiversity hot spots: Calcareous grasslands of South-Belgium (BIOCORE).
- 8) Invasive Plants in Belgium: Patterns, Processes and Monitoring (INPLANBEL), 01.01.2003-30.04.2006.
- 9) Studying apple biodiversity: opportunities for conservation and sustainable use of genetic resources (APPLE), 01.01.2003-30.04.2006.
- 10) Integrated management tools for water bodies in agricultural landscapes (MANSCAPE), 01.01.2003-30.04.2006.
- 11) Status, Control and Role of the Pelagic Diversity of the Austral Ocean (PELAGANT), 01.02.2002-30.04.2006.
- 12) Impact assessment and remediation of anthropogenic interventions on fish populations (FISHGUARD), 01.01.2003-30.04.2006.
- 13) Belgian shipwrecks: hotspots for marine biodiversity (BEWREMABI).
- 14) The Hinder banks: yet an important region for the Belgian marine biodiversity.
- 15) Feasibility study of ecological networks: ecological, economic, social and legal aspects (ECONET),

01.01.2003-31.12.2004.

Website: www.belspo.be/belspo/fedra/prog.asp?l=en&COD=EV

The **Federal Ministry of Environment** started to finance, in 2004, a project on environmental biosafety related to GMO's, managed by the Federal Public Service Health, Food Chain Safety and Environment, and entitled: 'Methodology elaboration for studies on environmental risk evaluation of hybridisation between GMO's cultures and indigeneous flora, and feasibility evaluation of the methodology in the case of colza'.

The **Walloon Region** collaborates with associations and research institutes among others on the following projects:

- scientific follow up of the 'Combles et Clochers' project;
- scientific follow up of the ecological management of road verges;
- research, organisation and follow up of the project aimed at developing nature in municipalities (PCDN);
- research on the conservation of underground cavities;
- follow-up of the Walloon environment using biological indicators (dragonflies, butterflies, birds, reptils and amphibians);
- biodiversity, management and maintenance of vegetation on some riverbanks of the Meuse;
- forest research, with a part on sylvicultural practices favourable to biodiversity.

As far as scientific support is concerned, the **Research Centre for Nature, Forests and Wood** (CRNFB), which depends on the Nature and Environment administration, conducts or coordinates various studies. At the biological diversity level, the main lines of research are:

- the inventory and the monitoring of biological diversity (OFFH);
- the monitoring of aquatic organisms (Hydrobiology section);
- the monitoring of the management of protected areas;
- the permanent inventory of forests that recently included parameters relating to biological diversity.

The CRNFB hosts the Information System on Biodiversity in the Walloon Region (mrw.wallonie.be/dgrne/sibw). The different universities also play an important role in research on biological diversity conservation, either independently (dissertations, theses, etc.) or through research agreements with the Walloon Region. For specific missions, the Region finances research activities of universities, institutes and naturalists' organisations.

The **Brussels Capital Region** is supporting research on biodiversity in the framework of the inventory and monitoring network of the flora and fauna (several species groups). The BIME is also supporting several university research projects on special species groups or on habitats and ecosystems, and is participating in cartography (Biological Evaluation Map) and evaluating projects in the framework of the blue and green network programme.

The BIME is collaborating in the research of e.g. the RBINS and the VUB on water quality with some macrophytes and macroinvertebrates. The BIME supported also research on the presence and dynamics of fox in the urban area. The BIME is also supporting especially research on bat species.

Flemish Region: the **Institute of Nature Conservation** (IN), a scientific institute of the Ministry of the Flemish Community, is an institute for applied scientific research related to the conservation of nature (in a broad sense). The Institute provides science-based information on nature and advises on its translation into policy. The Institute operates as a dynamic information and knowledge centre and falls under the direct responsibility of the appropriate Minister. It has an advisory function towards the government and additionally the IN contributes to the increase in and dissemination of information concerning nature conservation and the sustainable use of nature, biodiversity and natural resources.

Several key activities of the IN seem especially relevant within the context of this performance review: 1) studies on the current distribution of species and monitoring of their populations; 2) studies on the (ecological) typology of communities and ecotopes, their geographical distribution and temporal variation; 3) the Nature Report (NARA), that is drawn up biennially and provides an overview of the status of nature in the Flemish Region.

1) Distribution of species and monitoring of populations

The IN collects information on various aspects of the ecology of individual species and taxonomic groups. Studies on the current and past distribution of individual species and of changes in the

number and size of their populations provide an indispensable source of knowledge for the description of the state of nature in the Flemish Region. This information also serves as a solid base for the compilation of Red Lists, following standard methods. These provide an estimate of the threat status of species in a particular group of organisms. Red Lists provide important indications about the attention which should be devoted to certain species by authorities responsible for nature policy and managers of natural sites. The study of the relations between organisms and their surroundings is helpful for understanding and explaining the underlying causes of distribution patterns, local presence or absence and observed population trends. This knowledge is necessary to provide advice on the protection and conservation of endangered species.

The activities are geographically situated at two levels. On the one hand, information is collected for the whole of the Flemish Region, to get an overview of the distribution and populations sizes for the whole area. On the other hand, specific and detailed studies are carried out in selected areas, to examine changes in population sizes, spatial relations with environmental factors, effects of conservation policies, etc.

The studies of different species (groups) require a different approach and expertise. Therefore, for practical reasons research is often split into groups of species. However, there are clear similarities between the projects as far as assumptions, objectives, methods and applications are concerned. The various studies deal with four research themes: (i) Research of distribution patterns and application to conservation policies; (ii) Protection of species and auto-ecological research; (iii) Bio-indicative research; and, (iv) Monitoring of populations.

Examples of research into distribution include the following projects: vascular plants, various groups of invertebrates, fish, amphibians and reptiles, breeding birds, overwintering water birds and geese, and martelids.

2) Communities and ecotopes

Ecological typology outlines criteria to distinguish clearly recognisable, identifiable and quantifiable entities in nature, which can be used to classify, map and evaluate spatially identified spots or areas in e.g. nature reserves and management plans. Nature types that were recently outlined in cooperation with other institutes are: grasslands, mud flats and salt marshes, freshwater marshes, dunes and heathland, shrubs (tall herb vegetation), pioneering communities and peripheral woodland zones.

The ecotope typology is based on biotic, abiotic and landscape ecological data, taking into account the fact that degradation (acidification, fertilisers, fragmentation, etc.) can play an important role. In addition, historical data are taken into account. An important goal is the description of the present and possibly previous status of ecotopes and their communities, including species which require attention.

Current action points include drawing up pragmatic ecological typologies for stagnant freshwater environments and agriculturally altered - but nonetheless species-rich - grasslands. Ecotope typology will be extended to freshwater marshes, semi-natural grasslands, pioneering communities, shrubs (tall herb vegetation) and peripheral woodland zones.

In the context of geographical variation, work will initially be carried out on the Biological Evaluation Map (BWK), version 2. After a thorough description of the ecological typology, a start will be made on geographical mapping in the form of BWK version 3. This takes into account the relevant developments in this field.

In the context of temporal variation, firstly, a basic range of instruments will be drawn up for the integrated monitoring of stagnant freshwater environments and water courses, as well as agricultural, species-rich grasslands. A targeted monitoring programme will be set up, taking into account the possibilities of other initiatives in this field.

3) Nature Report

Data acquired as a result of monitoring by the Institute and other environmental authorities and associations, are crucial for the preparation and execution of policy and to ensure an accurate and prestigious Nature Report (NARA), which appears biennially. Till now four Nature Reports have been published.

Together with the Environment Report (MIRA), the Nature Report (NARA) provides an important scientific basis for the Flemish policy on nature and the environment and its evaluation. While MIRA reports on the general environmental quality and on environmental policy, NARA does so for the status of nature and its relevant policy. NARA also serves as an inventory in the context of the

Convention on Biological Diversity (CBD, Rio de Janeiro, 1992) and provides support to the reporting for the EU Birds and Habitats Directives. On the one hand, NARA evaluates the status of nature, and on the other hand, it evaluates policy plans (government manifesto, environmental and nature policy planning, etc.), policy processes (such as the way in which regulations and instruments are created), policy products (application of instruments, execution of actions, etc.), and policy impact. This requires the prompt availability of quantitative data on: the status of nature, which are easy to interpret (biotic and abiotic); on man's attitude to nature; the use of policy resources; and, the achievements of policy and its impacts. This is done by monitoring carefully selected indicators, measured with standardised methods and comparing them with goals and norms (preferably within set periods). The creation of databases, which can easily be consulted, is very important in this respect. Indicators, methods and goals or norms are based on research.

On the institute's website www.instnat.be the Nature Reports can be downloaded as well as other publications, atlases and data banks consulted.

A new nature indicators website that has been launched recently gives information on status and trend of the indicators included in the MINA-plan and the indicators that were adopted at EU level for biodiversity: www.natuurindicatoren.be

Integrated information systems have been developed during the last years such as MMIS (Environment Information System), Felnet (Flanders Environmental Library Network).

The **Institute for Forestry and Game Management** handles the data on wildlife collected by the game management units, including bag statistics and inventory of game populations and performs scientific research concerning freshwater fishery.

90. On Article 12(c), does your country promote and cooperate in the use of scientific advances in biological diversity research in developing methods for conservation and sustainable use of biological resources?

| | |
|---------------------------------------|---|
| a) No | |
| b) Yes (please provide details below) | X |

Further information on the use of scientific advances in biodiversity research in developing methods for conservation and sustainable use of biodiversity.

General and policy relevant research as well as site-specific research on habitats and species is performed for the development of conservation objectives and measures.

Scientific support is foreseen among others related to the cartography of habitats and the evaluation of conservational status.

The Belgian Forum on Forest Biodiversity (SPO) gathers and summarises background scientific information in order to develop management practices enhancing forest biological diversity.

This is also taken care of by the Steering Committees Biodiversity Convention and Nature.

Box LI.

Please elaborate below on the implementation of this article specifically focusing on:

- a) outcomes and impacts of actions taken;
- b) contribution to the achievement of the goals of the Strategic Plan of the Convention;
- c) contribution to progress towards the 2010 target;
- d) progress in implementing national biodiversity strategies and action plans;
- e) contribution to the achievement of the Millennium Development Goals;
- f) constraints encountered in implementation.