



## Problems of the biodiversity protection in the Slovakia

Zita Izakovicova

Institute of Landscape Ecology, Slovak Academy of Sciences, Štefaniková 3,  
814 99 Bratislava, Slovak Republic

### ABSTRACT

*This contribution is aimed at assessing activities in the field of biodiversity protection in the Slovak Republic. It presents analyses the weaknesses and strengths of biodiversity, assesses factors that affect future development and research in the fields of biodiversity and stability and also provides measures to improve the situation and provides also sets out the priorities of research in the future.*

**KEYWORDS:** biodiversity, Strategy of biodiversity protection, Slovak Republic

### Introduction

A breakthrough in the protection of biodiversity occurred in 1992 when in Nairobi the Convention on Biological Diversity was adopted. This was adopted as part of the UN Conference on Environment and Development UNCED 1992 in Rio de Janeiro. The convention on Biological Diversity was opened for signature on 5.6.1992 and by 14.6.1992 it had been signed by 157 countries by 4.6.1993 another 11 states had added their signatures. The Convention entered into force on 29.12.1993, when the ratifying instrument of the thirtieth convention country was deposited at the UN headquarters in New York. The object of the Convention and the main goal of the term biodiversity conservation is to improve the conditions for preservation of biological diversity and achieve sustainable use of biological resources (Agenda 21, 1992). The Convention commits all Parties to process and develop a national strategy for biodiversity conservation and use all the options and methods for identifying components of biological diversity. The Slovak Government, recognizing the importance of conserving biodiversity for preserving life on Earth, agreed to accede to the Convention in May 1993. On 23 August 1994, the President of the Slovak Republic ratified the Convention with the consent of parliament given on 18 August 1994. The instrument of ratification was deposited with UN Secretary General on 25 August 1994 and in accordance with Article 36. 1 of the Convention, after ninety days the Slovak Republic from 23 to November 1994 became a party to the Convention. In September 1994, the Ministry of Environment of the Slovak Republic established the National Secretariat of the Convention on Biological Diversity as the primary organizational unit with direct access to all institutes using components of biological diversity for scientific, economic and commercial goals, and with links to the international network of contact structures responsible for implementing the Convention on national and international levels. The aim of this paper is to highlight the activities and experience in management and biodiversity conservation in the Slovak Republic.

### Basic barriers of the biodiversity protection

Despite the fact that biodiversity protection is given considerable attention, the situation in this area can not be considered favourable. Currently, species are disappearing from 100 to 1000 times faster than would be the case with natural extinction and 60% of the world's ecosystems are degraded or used unsustainably. In the EU, only 17% of habitats and species and 11% of key ecosystems protected by legislation (the EU Strategy, 2011) have favourable conditions. Similar situation is in the Slovakia.

Slovakia is unique example of specific both natural and socio-economic conditions supporting a rich diversity of the landscape. It has very rich diversity of ecosystems covering both Pannonian and Alpine biogeographical regions (subregion Carpathian). The range of habitats is very wide, from the warm southern areas up to high-mountain ones occurring at higher elevations. Many of these communities are constantly under negative influences, causing their endangerment. Endangerment of lower plants in Slovakia is currently at 17.6% (including fungi). According to the Ministry of Environment (2011) endangerment of higher plants is 42.6% (for all categories of threat), or 30.3% (in categories CR, EN and VU). Endangerment of invertebrates in Slovakia is currently about 8.4% (or 5.4% in only CR, EN and VU categories). With regard to vertebrates, the risk is 59% (or 23.5% in only CR, EN and VU

categories).

Conservation of biodiversity is significantly affected by the country's socio-economic conditions. The socio-economic conditions of the Slovak republic can not be compared with any of the neighbouring countries. Slovakia, as distinct from other countries, has seen very strong collectivisation, nationalisation of land, etc. followed by re-privatisation. All these factors have very important influence on the protection and conservation of biodiversity. To the most important factors negative influenced biodiversity belong:

- Formal adoption of strategic documents - although Slovakia has developed strategic documents of good calibre, but their implementation in practice is a minimal; implementation of measures defined in various documents is shifted from year to year, many of them are ignored, and often these measures remain only declared in these documents,
- Poor coordination in those responsible for the conservation of biodiversity, whether at national, regional and local level, lack of coordination and duplication of research - e.g. re-mapping of habitats, duplicate processing methodologies for the production of documents and the protection of biodiversity, duplication of projects, lack of communication between research institutions, individual experts, between experts and the decision making sphere, lack of access to databases, trading information, negative influence on research from policy makers, donors, and the like.
- Uncompleted institution building of the State Nature Conservancy of the Slovak Republic and state administration bodies of nature and landscape (Nature Protection Inspection, district offices, regional reports and the like),
- Continuing sectoral approach to biodiversity conservation. The required interdisciplinary approach is generally accepted, but actual interdisciplinary projects are in practice unusual and rare,
- The continuing lack of capacity to carry out research, inventory, mapping and evaluation of habitats favourable to the care of protected areas and important habitats for endangered and revitalization of damaged habitats, to complete the reserve centres and rehabilitation centres
- Underdeveloped field research in the territory. Most of the projects built on data derived from literature, and more and more from the Internet, which can not provide effective protection of biodiversity,
- A significant gap between research and application, poor application of research results in real life - those responsible for the protection of biodiversity are often not willing to implement research findings in real life, the reasons behind this are varied - lack of funds, lack of readiness, but on the other side difficult technical language is often very far from the language of public,

- Conflicts of interest between economic development and biodiversity conservation - especially in the pressure of investors' urban development, economic pressures on sites important for biodiversity, corruption, nepotism and so on. Similarly persistent conflicts of interest between the development of specific interests such as fishing, hunting and biodiversity conservation - increased poaching, illegal trapping and so on,
- Governmental unpreparedness to handle the tasks arising from the transfer of skills, low participation of the population in decision-making processes and programs to protect biodiversity,
- Lack of research on social aspects of biodiversity conservation - the behaviour of the population, the level of environmental consciousness, value orientation, communication, using results in local politics and so on,
- The persistence of passivity in the field of education and promotion, low environmental awareness of the population, the preference of the population to solve socio-economic issues from environmental and so on. The environmental consciousness of the population of Slovakia is very low, among the lowest in the EU. The EU research (Attitudes of Europeans towards the issue of biodiversity. 2010) to 65% of respondents said they never heard the term biodiversity and 25.5% of respondents said that although they had heard the term before they did not know what it meant. Even worse was the situation in terms of knowledge of the NATURA 2000 network. As many 75.9% of Slovak respondents said they had never heard this term and 16.8% of respondents had heard of it, but did not know what it meant. These results are ranked in last place in the EU countries.
- Undetermined property ownership (a remnant of the socialist regime) the locations of protected areas, important habitats and so on. Lack of cooperation between nature conservation and the owners (managers) of land in protected areas, promoting the growth of inappropriate management of natural resources, land owners and managers, lack of compensation to owners for loss of profits and the like.
- Low success in international research competition, risk of being unable to use EU funds for involvement in international projects. Good success is achieved especially by academic departments, but international cooperation is concentrated only in the same places, particularly the lack of connection to projects for implementation of concrete measures to protect biodiversity,
- Negative effects of the transformation of agriculture on biodiversity, mainly due to resting the land, particularly grassland ecosystems - grassland ecosystems management inefficiency, the spread of synanthropic species, growing fragmentation of the country, isolation of populations and increase in the vulnerability of ecosystems, the growth of invasive species due to anthropogenic activities, lack of application of agri-environment schemes,
- Lack of monitoring of biodiversity. Monitoring has been proposed for multiple species, but the currently proposed regime for monitoring does not cover even half.

### Next steps

The basis for successful policy implementation in the field of biodiversity conservation is prioritization. The main priorities in the field of environmental research, primarily in terms of biodiversity and stability of the country may be considered to be:

- *identifying and evaluating the current state of biodiversity and ensure long-term ecological research* - focused on the development of complex biological and ecological inventories in order to identify the spatial specification of the current state of knowledge, as well as identifying trends, changes in conditions. In Slovakia a lot of inventory research at different levels has taken place and is now underway - at the level of species, communities, habitats and landscapes (mapping habitats, wetlands, landscape types, etc.). Many of these inventory surveys are not completed and therefore it is necessary to support the completion of current programs in order to create a comprehensive database. The prob-

lem with implementing this goal is the lack of qualified professionals and also the lack of institutional support for that kind of research,

- *monitoring of representative ecosystems and evaluating spatial ecological stability* - based on geo-ecosystem approach to biodiversity conservation. It is focused on understanding the current state of representative ecosystems, their presence in different regions, the current state of preservation, utilization and protection. The basis of this research is to preserve or restore the fullest possible range of representative ecosystems, their interconnectedness as basic conditions for a favourable conservation status of ecological stability of the country. Many representative geo-ecosystems, particularly in lowland intensive agricultural areas have been destroyed and in terms of spatial stability, their recovery is essential, or the revitalization of existing preserved but disturbed ecosystems,
- *monitoring and evaluation of processes and phenomena affecting biological diversity* - a specification of events, whether natural (natural disasters, etc.). Anthropogenic or contingent, which can negatively affect biodiversity and stability, as well as assessing their impact. In terms of biodiversity conservation particularly dangerous are anthropogenic factors - unsustainable use of natural resources, application of inappropriate management practices, production of hazardous substances - heavy metals, phenols, dioxins, and so on., Global climate change, spread of invasive species, uncontrolled release of genetically modified organisms, fragmentation of the countryside, isolation of populations creating artificial barriers to migration, desertification and reinforcement of synanthropisation and the like. The need to examine factors affecting biodiversity is referred to not only in Biodiversity Strategy but several other papers.
- *inventory research to determine the genetic diversity of domesticated and non-domestic biological resources* in order to maximize protection and economic utilization of genetic resources - identification, evaluation and documentation of valuable genotypes of old and regional breeds, which are an essential part not only of genetic diversity, but also a significant natural treasure and part of the cultural heritage of each nation.
- *economic valuation of ecosystem services* - research focused on the expression of the monetary value of natural resources, as well as evaluating the functions they perform in the country - e.g. economic evaluation of protective functions of forests, the economic evaluation of the protective, productive and environmental functions of wetlands and other non-forest ecosystems, the reflection of the economic value of resources in production processes, control and setting limits on resource consumption based on their fair values and the like. Research of ecosystem services on a national scale is given scant attention, unfortunately in Slovakia, this issue is very poorly developed
- *strengthening the legal and environmental awareness, changing the value orientation of people* - involves shaping public environmental awareness, focusing on changing lifestyles in accordance with the protection of biodiversity, a gradual increase in environmental awareness and engaging the general public in the process of protecting biodiversity. Only environmentally educated public is able to successfully promote biodiversity conservation in practice. An effective system of education for all ages is essential. It must also use unconventional and often very popular non-traditional forms of education such as the Internet, media and so on.

### Conclusion

In terms of the needs to eliminate these weaknesses and in terms of improving the situation, it is necessary to ensure an efficient, systematic and coordinated the protection of biodiversity. It is necessary to enable the coordinating body - the Commission for the protection of biodiversity, needs to be made operational to coordinate activities on biodiversity. The coordinating body must be established on an interdisciplinary basis, must necessarily take into account the social aspects of biodiversity, with which we are very much behind.

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