

April 2014

Fifth National Report to the  
Convention on Biological  
Diversity - HUNGARY



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## EXECUTIVE SUMMARY

Hungary is situated in the Carpathian basin, which is a region under various climatic influences. This has resulted in the formation of the special biogeographical unit, namely the Pannonian biogeographical region (or Pannonicum), the largest part of which belongs to Hungary. Although the territory of the country is relatively small in Europe – 3% of the total area of the European Union – it is rich in unique natural resources. There are several species in the Pannonian biogeographical region that occur only in Hungary. Therefore, we have a great responsibility in maintaining their populations. Hungary is not only rich in wildlife but diverse genetic resources for food and agriculture – fruit and vegetable landraces and local varieties etc. – can still be found in home gardens, orchards and households at rural areas. Due to the diverse ecological conditions various ecosystem types and diverse landscape have also developed.

The **total protected area** (either by national or based on EU legislation) is 22.2% of the territory of Hungary. Considering the different types of protection, the area protected by national law is 9.1%. The so-called Natura 2000 network – which is the area protected on the basis of EU legislation – is 21.39% of the country; however this network to a great extent (90%) overlaps with the areas protected by national legislation. The nature conservation sites of local importance cover almost 0.5% of the country. In 2011 the Hungarian Natura 2000 network was considered sufficient for all habitats and species of European importance, therefore, the designation of our Natura 2000 network was declared complete. With regard to protection status, Hungary has reached the Aichi target set for terrestrial and inland water areas; however progress is still needed regarding the long-term proper and effective management of the designated protected areas.

The **conservation status of habitats and species** of EU importance was surveyed and assessed in 2007 and 2013. During this period the methodology used for the assessment has improved, which needs to be taken into account when comparing the outcome of the two assessments. An important advancement is that in 2013 there were no habitats of EU importance that have not been surveyed and assessed. The categories of conservation status for habitats and species of EU importance under this biogeographical assessment are: favourable, unknown, unfavourable inadequate and unfavourable bad. Habitats in favourable conservation status have increased from 11% to 19% between 2007 and 2013. The conservation status of more than 50% of the habitats has improved. On the other hand more than 80% of the habitats of EU importance is still in „bad” or „unfavourable” conservation status. With regard to species of European importance, although the knowledge gap has decreased, 2% of the conservation status of species of EU interest is still unknown. Altogether 62% of the species are in “unfavourable inadequate” or “unfavourable bad” conservation status and only 36% of them are in “favourable” conservation status. Management plans lay the foundation of the management intervention to ensure the maintenance and restoration of the conservation status of species and habitats. The extent of areas with proper management plans has been increasing but further work is needed in this regard.

Hungary puts special emphasis on maintaining the genetic diversity of cultivated plants and farmed and domesticated animals, therefore the two national institutions are coordinating and harmonizing the relevant technical activities.

Hungary's geographical situation and biological diversity provides favourable conditions for **agriculture**: fertile plains, an advantageous climate, availability of water - the quantity of flowing water per inhabitant is said to be the largest in the world. Agriculture is one of the most important sectors in the Hungarian economy, the total area of agricultural land is 57.4% of the country's territory (46.5% of the country is arable land, 8.2% is grassland and 2.7 % is horticultural land, gardens, vineyards and orchards). In 2011, the total area of organic (ecological) farming was 2.3% of the agricultural area, in 2012 it was 2.7% which is still low and means that Hungary has not exploited its organic farming potential so far. In recent years the extent of agricultural area joining the agri-environmental programme has increased to 20% (of the total agricultural area).

20.7% of the country's territory is **forest area**, including plantations. With this ratio, Hungary belongs to the less forested countries of the EU. Hungarian forests are classified into 6 categories based on their naturalness: natural forests, close to natural forests, semi-natural forests, transferred forests, semi-plantations and plantations. From biodiversity conservation point of view the first three categories are favourable: natural forests, close to natural forests and semi-natural forests. 59% of the forest areas belong to these categories. Biggest part of the remaining 41% is mainly plantations or semi-plantations, mainly consisting of alien species. Almost 25 % of forests have primarily nature conservation function. which is an increase in the last decades. Forest reserves account for 0.63% of the total forest area, at these reserves no intervention and management is permitted.

The extent of area withdrawn from cultivation as well as the extent of forests/forest plantations, reeds and fishponds has increased between 2000 and 2013, while the rest of the cultivated areas have decreased. The extent of grasslands of the total agricultural land has shrunk to 8.2% from 12.9% in 20 years. However, the proportion of grasslands under protection (included in the Natura 2000 network) is more than double of the EU average. Areas withdrawn from cultivation include artificial surfaces, roads and other infrastructure elements but wetlands are also counted into this category. The largest part of this expansion is likely to result mainly from the expansion of artificial surfaces.

**Game stock** structure has changed significantly in recent years. Although forest health is deemed good compared to European standards, game damage is significant due to the too high population of big games, which exceeds the natural carrying capacity of our forests. As for small games, opposite trends can be observed: the population of some important indicator small game species of agricultural areas has decreased, mainly due to habitat loss.

With regard to **fragmentation**, Hungary's habitats are moderately fragmented in comparison with the EU average. There are significant differences between regions, the areas around the capital (Budapest) are the most fragmented and south-east Hungary is the less fragmented.

According to the Eurobarometer survey, **environmental awareness** of Hungarians increased from 41% in 2007 to 55% in 2011. However, only 10% of Hungarian respondents were

familiar with the term “biodiversity” and know what it means. Significant majority of Hungarians think that air and water pollution, man-made disasters, including oil spills and industrial accidents, and intensive farming, deforestation and over-fishing threaten biodiversity. Great majority think that climate change and conversion of natural areas to other uses threaten biodiversity. Regarding the seriousness of biodiversity loss significant majority of Hungarians think that the decline and disappearance of forests, climate change, endangering and disappearing of some animals and plants, decline and less variety of natural habitats are very serious or fairly serious problems.

The **main causes of biodiversity loss** are similar to those in other parts of Europe or even globally that several times short-term economic advantages dominate over long term environmental, social and economic interests. This results in the overuse of ecosystems, natural habitat loss, habitat fragmentation and degradation. Infrastructure and investments require more and more land and land use trends have environmental consequences. Invasive and alien species spread easily in disturbed and degraded habitats. Controlling invasive species and preventing their further spread in the country is an important conservation objective for Hungary. The collection of reliable data on invasive alien species has been going on for a while. National legislation prohibits the unauthorized introduction of new invasive organisms and regulates that agricultural lands must be maintained free of weeds. Currently 13.1% of natural and near-natural habitats have been heavily infested with invasive species. A dynamic domestic list of invasive alien species has been developed.

A great achievement is that in February 2014 the Hungarian Government adopted the new **National Biodiversity Strategy** (2014-2020), which is planned to be finally approved by the Hungarian Parliament after the Parliamentary elections in April 2014. In order to comply with the Global Strategic Plan for Biodiversity 2011-2020 Hungary’s National Biodiversity Strategy (2014-2020) deals with all the issues covered by the Aichi Targets and that are relevant to Hungary. A new and important element in the National Biodiversity Strategy is that within 6 strategic areas 20 objectives and 69 measurable targets and 168 related actions are determined, while the previous strategy only determined strategic directions but not measurable targets. Another new element is that it determines indicators directly related to the measurable targets.

With regard to **sectorial integration**, biodiversity aspects have been integrated into national strategies and their action plans, such as the National Sustainable Development Framework Strategy 2012-2024, the National Rural Development Strategy 2012-2020, the National Action Plan for the Development of Ecological Farming, the Fourth National Environmental Programme 2014-2020, including the National Nature Conservation Master Plan. Some integration can also be observed in certain parts of the National Climate Change Adaptation Strategy, the National Water Strategy and the National Forest Programme 2006-2015. However, more progress is needed in these areas. Other sectors and areas like energy, transportation, poverty reduction have not been successful in the integration of biodiversity aspects.

In order to be among those states, whose ratification counts to the entry into force of the Nagoya Protocol, Hungary deposited its ratification instrument in April 2014.

# **1 PART I. AN UPDATE ON BIODIVERSITY STATUS, TRENDS, AND THREATS AND IMPLICATIONS FOR HUMAN WELL-BEING**

## **1.1 What are the main characteristics of the country relevant to biological diversity?**

Hungary is situated in the Carpathian basin, which is a region under various climatic influences. This has resulted in the formation of the special biogeographical unit, namely the Pannonian biogeographical region (or Pannonicum), the largest part of which belongs to Hungary.

Due to the characteristics of the basin the majority of the area of Hungary is flat, only one third exceeds 200 m elevation, and merely 2% goes above 400 m sea-level. The highest peak is Kékes-tető (1 014 m), the lowest one is the flood plain of River Tisza, in the south of the country. The characteristic regions are the Northern and Trans-Danubian Hills of medium height and the two basins: the Great Plain and the Small Plain.

The backbone of the water system is given by two big rivers, the Danube and the Tisza, their length in Hungary is 417 and 598 km respectively. A significant part of the natural watercourses is originated in the Alps and Carpathians and flows into the two great rivers in the territory of the country. The largest lakes are Lake Balaton (598 km<sup>2</sup>), Lake Velencei (26 km<sup>2</sup>) and Lake Fertő/Neusiedl (322 km<sup>2</sup>) at the Austrian border with 82 km<sup>2</sup> in Hungary.

Although the territory of the country is small in Europe – 3% of the total area of the European Union – it is rich in unique natural resources. Hungary provides habitat for 17% of the plant and animal species of the EU Habitat Directive and 36% of species of the EU Birds Directive. Moreover, there are several species in the Pannonian biogeographical region that occur only in Hungary, therefore we have a great responsibility in maintaining their populations.

Due to the diverse ecological conditions various ecosystem types and diverse landscape have also developed. Species diversity is high compared to several other parts of Europe. At rural parts of the country – mainly in the economically less developed regions and remote areas – genetic, species and habitat diversity is higher. For instance diverse genetic resources for food and agriculture – fruit and vegetable landraces and local varieties etc. – can be found in home gardens, orchards and households at rural areas.

Hungary's geographical situation and biological diversity provides favourable conditions for agriculture: fertile plains, an advantageous climate, availability of water - the quantity of flowing water per inhabitant is said to be the largest in the world. 57.4% of the country is agricultural area (46.5% of the country is arable land, 8.2% is grassland and 2.7 % is horticultural land, gardens, vineyards and orchards), while 20.7% of the country is covered by forests or forest plantations.

## 1.2 What are the main threats to biodiversity?

The **main causes** of biodiversity loss are similar to those in other parts of Europe or even globally that several times **short-term economic advantages dominate over long term** environmental, social and economic **interests**. This results in the **overuse of ecosystems, natural habitat loss, habitat fragmentation and degradation**. Fragmentation prevents natural gene transfer between populations, which would be essential for the maintenance of healthy populations with diverse gene pool.

**Competition based economic development** is the main driver in economics which is only achievable with the ever **increasing exploitation of natural resources**. **Consumer society** is usually unaware of the environmental risks consumerism poses. Biodiversity aspects rarely find their way into development and trade policies. This can result in the exploitation of the carrying capacity of environmental systems and the decrease in their resilience. Infrastructure and investments require more and more land and **land use trends** have environmental consequences. **Invasive and alien species** spread easily in disturbed and degraded habitats.

More than half of the territory of Hungary is under cultivation. **Agricultural practices** often ignore the ecological character and the carrying capacity of the landscape, the proportion of intensive agriculture is high. Linkages and stepping stones between protected areas are often missing and the ratio of species and habitats in unfavourable condition is high. Biologically diverse lands with low productivity are in certain cases cultivated and biomass is sometimes produced in an unsustainable way as energy resource.

**Climate change** and climatic extremes further deteriorate the already stressed environmental systems.

## 2 PART II - THE NATIONAL BIODIVERSITY STRATEGY AND ACTION PLAN (NBSAP), ITS IMPLEMENTATION, AND THE MAINSTREAMING OF BIODIVERSITY

### 2.1 What are the biodiversity targets set by your country?

In February 2014 the Hungarian Government adopted the new National Biodiversity Strategy (2014-2020), which is planned to be finally approved by the Hungarian Parliament after the Parliamentary elections in April 2014. In order to comply with the Aichi Targets the new NBS contains the following 20 objectives:

<b>Objectives of the National Biodiversity Strategy (2014-2020) of Hungary</b>	<b>Relevant Aichi target(s)</b>
<b>Objective 1. Improve the conservation status of Natura 2000 areas, protected natural areas and areas protected by international conventions and provide adequate conservation management.</b>	5, 15
<b>Objective 2. Improve the conservation status of species of EU interest with</b>	12

the most unfavourable status and the most endangered protected species.	
<b>Objective 3.</b> Enhance the knowledge base serving the successful and effective conservation of species in need of protection and of EU interest together with habitat types of EU interest.	19
<b>Objective 4.</b> Increase the recognition and social reputation of biological diversity, protected assets and areas of EU interest and protected natural areas together with Natura 2000 areas by means of <b>information dissemination, awareness-raising</b> and exhibitions.	1
<b>Objective 5.</b> Conservation of <b>landscape diversity</b> and <b>ecological landscape potential</b> .	11
<b>Objective 6.</b> Harmonized development of the elements of <b>green infrastructure</b> in order to <b>maintain and enhance</b> the operability of ecological systems and to promote the adaptation to the effects of climate change, including the improvement of the connections between areas of ecological and landscape ecological function, as well as the reconstruction of potential landscape elements together with the <b>restoration</b> of degraded ecosystems.	11, 15
<b>Objective 7.</b> Determine the value of ecosystems and their material and immaterial <b>services</b> that are indispensable for mankind and integrate this value into comprehensive and thematic natural resources management strategies of local- and state-level land use and land development decision-making.	14
<b>Objective 8.</b> Integrate conservation and biological and landscape diversity enhancement <b>aspects</b> into comprehensive and related sectoral policies, with the <b>tools of green infrastructure and ecosystem services</b> , with special focus on spatial planning.	2
<b>Objective 9.</b> Conservation, enhancement and sustainable use of <b>genetic resources serving as the basis of agriculture</b> , increasing the diversity of genetic resources for agriculture.	13
<b>Objective 10.</b> Promoting <b>diverse and mosaic agriculture</b> that takes into account biodiversity, environmental and conservation considerations and promotes the use of domestic and local biological resources, especially the diverse animal and plant genetic resources for food and agriculture	7
<b>Objective 11.</b> By 2020, maximizing the extent of areas where sustainable farming is taking place through the <b>biodiversity related measures of the Common Agricultural Policy</b> (agri-environmental management payments, Natura 2000 compensations payments, etc.) and which contribute to agro-biodiversity, and the conservation and improvement of biological diversity.	3, 7
<b>Objective 12.</b> Conservation and improvement of biodiversity through increasing the extent of areas under near-natural <b>forest management</b> practices and effective enforcement of biodiversity considerations during comprehensive forest management planning.	7
<b>Objective 13.</b> In the course of wild management, big <b>game management</b> does not endanger the renewal of biodiversity and while natural reproduction of small	7

game stock recovers, endangered populations are restored.	
<b>Objective 14.</b> In the course of natural-water <b>fish management</b> , promoting the renewal of fish stocks by fostering natural reproduction rates, conservation of endangered species and wild forms, restoration of endangered habitats, especially the protection of spawning and over-wintering areas. Ensure the longitudinal and transverse interoperability of waterbodies (watercourses).	6, 7
<b>Objective 15.</b> Research of the role of <b>waters</b> in water and water-dependent terrestrial ecosystems, promotion and harmonization of water management together with sensible water use, reduction of pollution pressure on waters in order to preserve biodiversity and maintain ecosystem services provided by water-dependent micro- and macro-scale forms of life.	6, 8
<b>Objective 16.</b> <b>Control</b> and prevent further spread of <b>invasive alien species</b> harmful to natural and near-natural ecosystems and <b>prevent the introduction and establishment</b> of potentially harmful invasive species.	9
<b>Objective 17.</b> Apply the precautionary principle regarding the release of <b>genetically modified organisms</b> into the environment in order to eliminate harmful effects on biological diversity.	7
<b>Objective 18.</b> <b>Conservation</b> of animal and plant <b>species endangered by trade.</b>	12
<b>Objective 19.</b> Provide <b>access to genetic resources</b> and ensure the <b>fair and equitable sharing of benefits</b> arising from their utilization thus promoting the early entry into force of the Nagoya Protocol.	16, 18
<b>Objective 20.</b> Enhanced <b>integration of biodiversity conservation</b> in Hungary's international engagements, such as <b>when providing financial support</b> to developing countries.	4, 20

Aichi target 17 states that each Party needs to develop and commence implementing an effective, participatory and updated national biodiversity strategy and action plan by 2015. With the development and governmental adoption of the new National Biodiversity Strategy (2014-2020), Hungary has taken significant progress in achieving this important Aichi target.

## 2.2 How has your national biodiversity strategy and action plan been updated to incorporate these targets and to serve as an effective instrument to mainstream biodiversity?

Hungary's National Biodiversity Strategy for the period 2009-2014 was part of the third National Environmental Programme (2009-2014), which was approved by the Parliament. As the Strategy expires in 2014 its official revision process started in January 2013 with the aim to incorporate the Aichi Targets into the new Strategy. During the 1-year-long in-depth revision process in addition to the evaluation of the biodiversity status of Hungary, an entirely new National Biodiversity Strategy (NBS) was developed for the period 2014-2020 together with an impact assessment.

In February 2014 the Hungarian Government adopted the new National Biodiversity Strategy 2014-2020 (NBS), which is planned to be finally approved by the Hungarian Parliament after the Parliamentary elections to be held in April 2014.

The new NBS differs from the previous Strategy in several aspects:

- The new NBS is a self-standing document (and not part of the National Environment Programme), it was approved by the Government and planned to be approved by the Parliament as an independent Strategy.
- The new NBS has a very clear structure as follows: Executive Summary (1) Introduction (background, planning process), (2) Evaluation of biodiversity status (the substructure follows the issues of the objectives), (3) 2020 Vision and the Strategy, including the strategic areas, objectives, measurable targets, actions and indicators, (4) Financial resources and institutions supporting the implementation of the Strategy, (5) Monitoring the implementation.
- The vision of the NBS tries to follow the international and EU phrasing. However, in addition to the “vision” (*“The 2020 vision of the Strategy is halting the loss of biodiversity and the degradation of ecosystem services in Hungary by 2020, and restoring them in so far as feasible.”*), the “overall objective” of the NBS is also determined (*“The overall objective of the Strategy is to integrate biodiversity considerations into broader policies, strategies and programmes and into their implementation.”*).
- In order to comply with the Global Strategic Plan for Biodiversity 2011-2020 Hungary’s National Biodiversity Strategy (2014-2020) deals with all the issues covered by the Aichi Targets and that are relevant to Hungary.
- A new and important element in the NBS is that within 6 strategic areas 20 objectives and 69 measurable targets and 168 related actions are determined, while the previous strategy only determined strategic directions but not measurable targets. Another new element is that the NBS determines indicators directly related to the measurable targets.
- In order to monitor implementation, an interim assessment is planned to be carried out in 2017 and a post-assessment in 2012. All monitoring reports will be publicly available at the National Clearing-House Mechanism (<http://www.biodiv.hu/>).

### 2.3 How effectively has biodiversity been mainstreamed into relevant sectoral and cross-sectoral strategies, plans and programmes?

The new **Fundamental Law** of Hungary, the foundation of the Hungarian legal system that came into effect on 1 January 2012 enhanced and fortified the basis of the Hungarian environmental jurisdiction by raising biodiversity into constitutional level. According to Article P of the Fundamental Law:

*“All natural resources, especially agricultural land, forests and drinking water supplies, biodiversity – in particular native plant and animal species – and cultural assets shall form part of the nation’s*

*common heritage, and the State and every person shall be obliged to protect, sustain and preserve them for future generations.”*

Since 2006 Hungary has been following a GMO-free strategy, which is supported by all parliamentary parties. This is underlined by the new Fundamental Law of Hungary, which includes the pursuit of a GMO-free agriculture. No cultivation of any kind of genetically modified plant variety/hybrid is authorised in Hungary according to the legislation in force. Hungary's GMO-free policy is based on scientific results and the precautionary principle.

The **National Sustainable Development Framework Strategy 2012-2024** (NSDFS) was adopted by the Parliament. It provides an interface between cross-sectoral policies and strategies from sustainable development aspect. It sets up the environmental carrying capacity as a barrier to economic development and underlines that biodiversity and other renewable natural resources must be protected and their overexploitation and exhaustion must be prevented. It also provides entry points for mainstreaming biodiversity into different sectors (e.g. education, energy, R&D, transportation, etc). The NSDFS also emphasises the importance of conserving non-protected areas.

The structure of the NSDFS helps the actors of society to identify their responsibilities in the transition to sustainability. The system of goals and measures are grouped according to human, social, natural and economic resources and assigned to the different actors of society like citizens/families, business, small communities, NGOs, churches and the government sector.

Individuals and families are responsible for reducing environmental damage and limiting the use of scarce resources. Business should support environmental organisations and activities and switch over to environment-friendly technologies, while reducing the consumption of natural resources (inputs) and pollution. As for NGOs, their sheer existence is indispensable, as they can promote the values of environmental sustainability the most effectively. The government sector has the responsibility in transferring sustainability related knowledge and the ability of systematic thinking through public education, support research and development, innovation, basic and applied research activities at universities, as well as initiatives aimed at the creation of local, ecological production and consumption systems, closed material cycles as well as ecological and landscape preserving farming. Ban on the use of resources in a critical state and green economy reforms are also the duty of the government sector.

The new **National Environmental Program 2014-2020** (NEP-4) has been developed parallel with the NBS and the NEP-4 is to be accepted by the Parliament later this year. NEP-4 has a specific strategic objective on biodiversity conservation together with the protection of all natural and landscape assets. The objectives and actions contained in NEP-4 are harmonized with the NBS and the two strategic documents support each other.

NEP-4 deals with several issues that are only marginally or not specifically addressed by the NBS, such as sustainable consumption, waste management, climate change, energy efficiency, improvement of air quality etc. Objectives and actions set by NEP-4 in this regard support the implementation of the NBS.

NEP-4 contains the fourth **National Nature Conservation Master Plan 2014-2020**, which determines concrete and practical actions related to nature conservation about the following:

- Conservation status of Hungary: protection of areas and assets important for nature conservation
- Management, maintenance and guarding of protected areas
- Collection of conservation related data: Conservation Information System, the National Biodiversity Monitoring System and other monitoring methods
- Conservation planning activities, management plans for protected areas
- Public relations, awareness-raising, exhibitions, R&D, ecotourism, websites
- International cooperation related to nature conservation
- Financing
- Legislative and institutional background

The Act XXVI of 2003 on the **National Spatial Plan** lays down the national regulations for land use and the spatial framework of spatial planning in order to harmonise land use in Hungary's settlements and regions of different features and to develop a uniform infrastructure network. It was supervised in 2013. The spatial plan ensures the protection of natural, landscape and cultural heritage values through rules of zones primarily. The zone of the national ecological network (core area, ecological and green corridor and buffer area) including natural and semi-natural habitats of national importance and the unified and composite system of ecological corridors, which provide links between them. In the zone of core areas and ecological corridors the rules restrict the designation of areas for development, the placement of transport infrastructure and new surface mines, as well as the prescription the utility lines fit into the landscape. These regulations indirectly contribute to the protection of biodiversity.

The **European Union Strategy for the Danube Region** – ratified by Hungary in 2011 – is a macro-regional development strategy of the Danube countries. It concerns the sustainable development of the region and the protection of its natural and cultural assets.

Its biodiversity goals include the contribution to the 2050 EU vision and 2020 EU target for biodiversity, the effective management of Natura 2000 sites and other protected areas, the protection and restoration of the most valuable ecosystems and endangered animal species, the development of a green infrastructure in order to connect different bio-geographic regions and habitats along the river and the reduction of the spread of invasive alien species, among others.

The **Second National Climate Change Strategy for 2014-2025 with an outlook to 2050** contains a National Decarbonisation Roadmap and a National Adaptation Strategy. It recognizes the threats that climate change poses on biodiversity and affirms that adaptation and mitigation measures can have either positive and negative ecological impacts or side-effects. Therefore, knowing and influencing direct anthropogenic effects are the most important, most efficient and most predictable intervention points from the aspect of climate sensitivity of ecological systems. It emphasises the fact that the conservation of biodiversity serves as a basis for adaptation to climate change.

With regard to local adaptation (by ensuring the protection of biodiversity and preserving the natural status of ecosystems), it proposes a number of actions, as follows: defining priority lists of species and habitats particularly vulnerable to impacts of climate change; preserving and restoring biodiversity; restoring and improving water retention capacities of wetlands; implementing ecological restoration programmes; maintaining diversity and mosaic-like patterns of habitats; introducing management methods to minimize the expansion of invasive alien species; enhance the monitoring of processes.

The **National Rural Development Strategy 2012-2020 (NRDS)** aims to reverse unfavourable processes predominant in the countryside. Based on the vision that has sustainable, viable agricultural and food production and values of rural life at its core, the NRDS defines the objectives and principles of Hungary's rural development policy as well as provides a framework for the implementation of the relevant programmes and measures.

The NRDS deals with increasing rural employment, balanced and varied agriculture and forestry that utilises resources in a sustainable manner, re-establishment of a diverse production structure, local food production and markets, rural-urban relations, the exploitation of export opportunities of high value-added food products, the strengthening of cooperative alliances, local energy production, rural local communities, improvement of the standard of living, a reversal in the rural population decline, and the conservation of ecosystems and biodiversity.

One of the five strategic goals pursued by the strategy is dedicated to preserving natural values and resources, including biodiversity and natural ecosystems. Within the strategic area of natural resources and environment 11 national programmes have been formulated, including a special programme targeting the protection and restoration of natural values, areas and ecosystem services.

The NRDS specifically deals with issues directly relevant to biodiversity conservation:

- the protection of drinking water bases, the preservation of water stocks, soils, natural wildlife and landscapes, increased environmental safety;
- the protection of domestic and local animal breeds and plant varieties;
- the preservation of Hungary's GMO-free status;
- development of a legislative, institutional and financial background that facilitate the protection of areas and assets important for nature conservation;
- maintenance of financial schemes that support agricultural biodiversity and the revision of harmful subsidies;
- enhancement of the management role of national park directorates;
- improving outreach to society (civil rangers, NGOs, educational institutions);
- keeping forests in state ownership and implementation of management practices taking the ecosystem approach more into account;
- control of invasive alien species;
- facilitating the adaptation to the potential effects of climate change;
- supporting local varieties;
- protection and maintenance of protected areas of local interest, historical gardens, unique landscape features.

The instruments and measures required for the implementation of the NRDS and its specific programmes are described in the so-called Darányi Ignác Plan. One of its main objectives is to create a regulatory environment that facilitates the protection of basic values that are of key importance with regard to the NRDS, such as the right to health, a healthy environment and foods, biodiversity conservation, the preservation of natural resources in rural areas, including soil, water bases, landscapes that form part of the national cultural heritage, farming and settlement values, sustainability and the rights of future generations.

The **National Action Plan for the Development of Ecological Farming 2014-2020** adopted in January 2014 aims to integrate environmental risk mitigating measures into ecological farming, to support biodiversity conservation measures and to protect beneficial living organisms (e.g. non-cultivated edges and bands, sowing edge plants for providing nutrients to pollinating insects).

It also determines the areas where different aspects of ecological farming can be integrated with other agricultural programs, like gene conservation, backyard gardening, habitat management, etc.

The **National Forest Programme 2006-2015** recognizes the role of forests in the conservation of biodiversity and urges the introduction of sustainable forest management practices that preserve the diversity and natural state of the forests. This strategy also emphasises the importance of improving the cross-sectoral cooperation in forestry, being indispensable in the conservation of biodiversity. The programme has been developed in harmony with the EU Forest Action Plan and the declaration of the fourth Ministerial Conference on the Protection of Forests in Europe. The programme is implemented based on annual implementation plans, focusing on 10 development areas, including nature conservation as a distinct implementation area.

The development area addressing the interrelation between nature conservation and forestry has been identified based on the fact that the protection and conservation of natural values – species, habitats and areas – cannot be restricted to protected forests. On the contrary, it requires the nature-friendly management of all forest ecosystems. In line with this, the overall goal of the plan is to constantly improve the management of forest by applying nature-friendly management approaches on a growing area of forest.

Concrete measures implemented within the programme include the followings:

- the natural regeneration of forests on extended areas;
- increasing the extent of natural forests regenerated from seed;
- preserve groups of trees and ecological green corridors to ensure the protection of habitats;
- creating no-harvest zones to preserve the habitats of protected species;
- respecting spatial and time limitations to ensure the protection of plants and animal species;
- applying special cultivation methods and working patterns,
- repression of invasive alien species;
- replacing forest stands of non-indigenous species with native species;
- developing diverse forest structure composed of several layers.

The „**Kincsem**” **National Equestrian Program 2014-2020** specifically addresses the gene conservation of native horse varieties that are maintained mostly in public national studs.

The **National Plant Protection Action Plan** adopted in 2012, intends to mitigate the risks imposed to human health and the environment originating from the use of plant protection products and from pest management programs, especially at areas with extreme environmental vulnerability. The sensible use of herbicides and pesticides has an important direct effect on biodiversity. The plan also encourages afforestation, the introduction of integrated crop production techniques for the protection of biological diversity, as well as to study all possibilities for reducing the use of plant protection products (spread of natural enemies, pollination, etc.). Objective 6.1.2. (Development of national plant protection programs for research and innovation) includes targeted support for domestic institutes responsible for maintaining and safeguarding the old plant varieties.

The **Food-chain Safety Strategy 2013-2020** that aims to ensure the safety and quality of our food while adopting environmentally-friendly food production-methods, has several interfaces with other national strategies and focuses on transparent and mutual information exchange between affected parties. However it does not deal with biodiversity conservation, and its importance regarding food-chain safety in particular.

The **National Water Strategy** adopted in 2013 determines short-term (-2014), mid-term (-2021) and long term (-2027) objectives. It aims to conserve and improve the quality of our waters both on the surface and underground, mitigate the effects of climate change, develop sound irrigation systems, and promote local grey water use. Biodiversity conservation as a „side-effect” of harmonized and sustainable land use and water management appears throughout the Strategy.

The **National Transport Strategy 2013-2030** determines the objectives in transport system developments until 2030 with an outlook until 2050. Biodiversity does not appear as a particular objective in the National Transport Strategy, nevertheless biodiversity loss is a proposed indicator for measuring the impacts of transportation.

The main goal of the **National Energy Strategy 2030** is to terminate the country’s energy dependency. The strategy defines five tools to achieve this goal, and two of them concern biodiversity indirectly: energy saving and the support of renewable energy production. On the other hand, the fifth corner point of the strategy is the creation of a bipolar agriculture that can flexibly shift between food and energy plants as needed by gradually involving fallow land into agriculture. Fallow lands play an important role in biodiversity conservation and their introduction into agriculture is not advisable. The strategy encompasses some rules about the conditions when fallow lands should be used for energy plant production to reduce biodiversity loss.

The European Union provides a significant financial resources from its 2014-2020 multiannual budget for the implementation of Hungarian development projects. Projects are designed together with the European Commission. The **Partnership Agreement** between Hungary and the EU provides the basis for all activities related to the planning of financial resources use (this document has the highest position in the planning hierarchy). Thematic objective 6 of this document includes habitat conservation, the improvement of green infrastructure and environmental education, gene conservation and landscape-adapted agriculture. The **Environment and Energy Operative Programme** provides detailed actions and assigned financial resources for this objective. The **Hungarian Fish Management Operative Program** 2014-2020 is currently under development, the final draft is now available for social consultation. It is based on the provisional guidelines of the European Maritime and Fisheries Fund and its objectives include the conservation of fish diversity in natural waters and the spread of extensive aquacultures in order to protect the environment and biodiversity.

## 2.4 How fully has your national biodiversity strategy and action plan been implemented?

During the review and renewal of the National Biodiversity Strategy (as described in Chapter 2.2) the implementation of its actions and the state of biodiversity were analysed. It can be concluded that considerable progress has been achieved regarding several strategic objectives, however various objectives and actions have been only partially met or in certain cases no real implementation has taken place at all.

The analysis showed that Hungary has outstanding biodiversity and high species and habitat diversity within Europe. However, unfortunately the worldwide and European trends are also relevant. This means that drivers and pressures of biodiversity decline have grown more than the speed and effectiveness of policy tools aiming at halting biodiversity loss.

In order to learn the lessons from the partial implementation of the NBS, clear and measurable targets with accompanying indicators have been developed during the review of the NBS. The participatory approach applied during the renewal of the NBS as well as the involvement of various stakeholders through several workshops help to promote ownership. The adoption of the new NBS (2014-2020) as an independent documents, which contains concrete deadlines for monitoring can be considered as a safeguard. However, certainly real commitment is needed in the concrete implementation of the objectives from all stakeholders.

### 3 PART III - PROGRESS TOWARDS THE 2015 AND 2020 AICHI BIODIVERSITY TARGETS AND CONTRIBUTIONS TO THE RELEVANT 2015 TARGETS OF THE MILLENNIUM DEVELOPMENT GOALS.

#### 3.1 What progress has been made by your country towards the implementation of the Strategic Plan for Biodiversity 2011-2020 and its Aichi Biodiversity Targets?

In this section Hungary's progress towards achieving the Aichi targets is analysed. In order to show a simple assessment of progress, a "traffic-light" scheme is used accordingly:

	Target is achieved.
	Implementation in good progress.
	Partially implemented.
	Implementation has started, limited progress.
	No progress at all.

#### Aichi Target 1

*By 2020, at the latest, people are aware of the values of biodiversity and the steps they can take to conserve and use it sustainably.*

	Implementation has started, limited progress.
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The Flash Eurobarometer 379 survey has been carried out about the attitudes towards biodiversity in the European Union in June 2013. The report of the survey provides an overview of the awareness of Hungarians towards biodiversity in comparison with citizens of other EU Member States.

Respondents were asked whether they are familiar with the term "biodiversity". Only 10% of Hungarian respondents were familiar with the term "biodiversity" and know what it means. This also means that there is unfortunately a fall in familiarity with the term "biodiversity" compared with previous surveys. However, in 2007 and 2010, respondents in Hungary were asked about "biological diversity" and in 2013 they were asked if they have heard of the term "biodiversity". 37% of Hungarians feel informed about biodiversity loss.

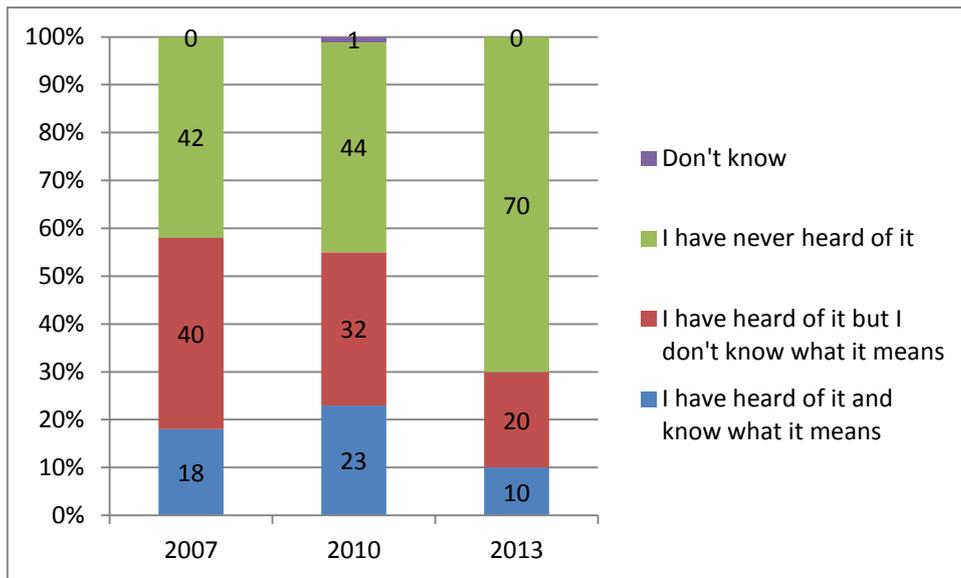


Figure 1. Familiarity of Hungarian citizens with the term „biodiversity”

The survey also tackled Europeans’ views on the various threats to biodiversity – air and water pollution, man-made disasters, intensive farming, deforestation and overfishing, climate change, the conversion of natural areas to other uses, and the introduction of new plants and animals. It also explored the extent to which they believe that each of these processes affects biodiversity and how their views on these processes are related. Significant majority of Hungarians think that air and water pollution (99%), man-made disasters, including oil spills and industrial accidents (97%), and intensive farming, deforestation and over-fishing (97%) threaten biodiversity. Great majority think that climate change (95%) and conversion of natural areas to other uses (94%) threaten biodiversity. All these ratios are above the EU average. On the other hand, people are less likely to see invasive alien species as a threat to biodiversity, only 78% consider it a threat, which is below the EU average.

Regarding the seriousness of biodiversity loss significant majority of Hungarians think that the decline and disappearance of forests, climate change, endangering and disappearing of some animals and plants, decline and less variety of natural habitats are very serious or fairly serious problems.

Respondents were asked how serious the problem of biodiversity loss would be at different geographic levels. 41% of Hungarians believe that biodiversity loss is a serious problem, 50% think it is a fairly serious problem in the country. The same number of people believe that biodiversity loss is a very serious (45%) or fairly serious (46%) problem at EU level and even more people believe that biodiversity loss is a very serious (64%) or fairly serious (33%) problem at a global level.

Respondents were asked whether the decline in biodiversity has had an impact on them personally. Respondents in Hungary (66%) are second most likely in Europe to say that they expect that biodiversity loss will have an effect on them, either now or later on. 30% say that it will not affect them, but will effect their children.

With regard to people's views on the importance of biodiversity conservation, 99% of Hungarians agree that protecting biodiversity is a moral obligation and 92 % agree that our

well-being and quality of life are reasons to halt the loss of biodiversity. 89% of Hungarians believe that biodiversity is indispensable for the production of goods such as food, fuel and medicine and 81% agree that Europe will get poorer economically as a consequence of biodiversity loss. 89% of our citizens think that biodiversity is essential in tackling climate change.

In addition to the Eurobarometer survey, nature conservation institution also collected data about public behaviour related to nature conservation. In 2012 1,4 million people visited the Hungarian national parks, which is a 10% increase in comparison with the previous year. In 2011 59% of the visitors came to visit the national parks specifically, 51% came together with family. Conservation exhibition sites are the most important locations where environmental education and ecotourism take place.

National park directorates significantly contribute to awareness-raising about biodiversity as they operate 28 visitor and education centres, maintain 161 nature trails, 6 landscape houses, 3 arboretums and botanical gardens, 52 exhibition sites and 42 caves are opened up for visitors.

Since 2007, the National Park Week has been organized annually, which is another opportunity for information dissemination about biodiversity conservation.

Another forum of educational and awareness-raising activities is the school-based environmental education. 44 so-called “forest schools” are operated by forestry companies or national park directorates, while NGOs and companies maintain additional forest schools throughout the country.

## Aichi Target 2

***By 2020, at the latest, biodiversity values have been integrated into national and local development and poverty reduction strategies and planning processes and are being incorporated into national accounting, as appropriate, and reporting systems.***



Implementation has started, limited progress.

Biodiversity aspects have been integrated into national strategies and their action plans, such as the National Sustainable Development Framework Strategy 2012-2024, the National Rural Development Strategy 2012-2020, the National Action Plan for the Development of Ecological Farming, the Fourth National Environmental Programme 2014-2020, including the National Nature Conservation Master Plan.

Some integration can also be observed in certain parts of the National Climate Change Adaptation Strategy, the National Water Strategy and the National Forest Programme 2006-2015. However, more progress is needed in these areas.

Other sectors and areas like energy, transportation, poverty reduction have not been successful in the integration of biodiversity aspects.

In addition to the reporting schemes of biodiversity-relevant sectors, each year the Hungarian Statistical Office also collects and disseminates certain biodiversity relevant standard national information, such as the extent of protected areas and other information on protected natural assets, forest coverage and forest use etc. Biodiversity aspects have not been mainstreamed into national accounting yet.

### Aichi Target 3

***By 2020, at the latest, incentives, including subsidies, harmful to biodiversity are eliminated, phased out or reformed in order to minimize or avoid negative impacts, and positive incentives for the conservation and sustainable use of biodiversity are developed and applied, consistent and in harmony with the Convention and other relevant international obligations, taking into account national socio economic conditions.***

 Implementation has started, limited progress.

In order to assist the implementation of Aichi Target 3 the overall objective of the NBS has determined to “integrate biodiversity considerations into broader policies, strategies and programmes and into their implementation”. Several parts of the NBS deal directly or indirectly with eliminating harmful subsidies or minimizing their negative impacts, these include for instance the following:

- with regard to ecosystem services: NBS includes actions such as: “Incorporating the economic valuation of ecosystem services into impact assessments and cost-benefit analysis” or “Integrating aspects of the conservation and enhancement of ecosystem services in infrastructure developments having direct effect on the quality of ecosystem services”;
- with regard to multifunctional agriculture: NBS includes actions such as: “Review and if necessary modify financial support systems adversely affecting agrobiodiversity conservation”, “Maintenance and operation of financial and payment systems serving the conservation of agricultural biodiversity”.

Rural development, including agriculture is one of the sectors, where incentives and subsidies have a significant role. The National Rural Development Strategy 2012-2020 sets a target to maintain financial schemes that support agricultural biodiversity and to revise harmful subsidies.

Although the revision and elimination of harmful subsidies can be observed in certain important strategic documents, the success of these targeted actions certainly lies in their effective implementation.

## Aichi Target 4

*By 2020, at the latest, Governments, business and stakeholders at all levels have taken steps to achieve or have implemented plans for sustainable production and consumption and have kept the impacts of use of natural resources well within safe ecological limits.*



Implementation has started, limited progress.

According to the Eurobarometer survey, environmental awareness of Hungarians increased from 41% in 2007 to 55% in 2011 (the EU average was 60% in 2011). This might be the result of awareness raising activities and communication, which should be maintained and enhanced in the future. With regard to the consumption of products, price is the most important factor for Hungarians regarding their intention to buy environmentally-friendly products, which is probably due to the economic situation. Although there is a decline since the last survey, 62% of the population is still ready to buy products which are labelled as environmentally friendly but which may cost more (the EU average is higher, 72%).

The general consumption of Hungarian citizens was mainly influenced by the economic crisis in the period of 2009-2012. Lower consumption could be observed in case of food or energy consumption. However, the number of single-person households has continued to increase, which result in higher per capita resource use. The consumption of disposable short-live products and the amount of packing material have been constantly increasing, while the re-use and recycling of these materials is still not solved in the whole territory of the country. The ratio of reusable bottles and beverage containers is still low.

There is a positive tendency for healthy and local food products produced in organic farming, a number of towns and cities operate direct selling markets, which also sell organic products. A number of measures have been taken to promote sustainable consumption and production (e.g. environmental education, encourage environmentally friendly transportation, organic food consumption, efficient resource use) but still much more effort is needed to achieve efficient and sound use of natural resources at all levels.

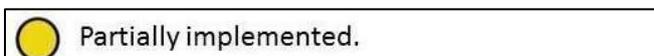
Therefore, the issue of sustainable consumption is addressed in details by the fourth National Environmental Programme (2014-2020). NEP-4 aims provide a framework that aims to:

- encourage efficient and reduced use of resources,
- minimize and avoid the environmental damage resulting from the extraction and use of resources,
- promote the reuse of used resources in the economy by promoting reuse and recycling,
- enhance innovation,
- build on the partnership of the State, the economic sector and others and provides joint consideration of the various interests.

In order to achieve these aims, NEP-4 defines actions to be taken by the government, the business sector, the society and NGOs. Special consideration is given to the efficient use of natural resources and to mainstream this idea in sectoral policies.

## Aichi Target 5

*By 2020, the rate of loss of all natural habitats, including forests, is at least halved and where feasible brought close to zero, and degradation and fragmentation is significantly reduced.*



In Hungary, the proportion of agricultural area (57.4 %) is much higher, while the proportion of forest area is lower than the EU average. The area affected by fishing activities is small, the bulk of which is natural inland fishing.

In Hungary the extent of areas withdrawn from cultivation as well as the extent of forests and forest plantations, reeds and fishponds have increased between 2000 and 2013, while the rest of the cultivated areas have decreased (see table below). Areas withdrawn from cultivation include artificial surfaces, roads and other infrastructure elements but wetlands are also counted into this category. The largest part of this expansion is mainly from the expansion of artificial surfaces due to infrastructural development and the expansion of settlements.

Year	Area (thousand hectare)						Total
	arable land	garden, orchard, vineyard	grassland	forest and forest plantation	reeds, fishponds	area withdrawn from cultivation	
<b>2000</b>	4 500	303	1 051	1 770	92	1 588	<b>9 303</b>
<b>2013</b>	4 326	255	759	1 934	102	1 928	<b>9 303</b>
<b>Change</b>	-174	-48	-292	164	10	340	

Table 1. Land use changes in Hungary between 2000 and 2013 (Source: Hungarian Central Statistical Office, 2014)

Based on the survey of the European Environmental Agency published in 2011, Hungary's habitats are moderately fragmented in comparison with the EU average. There are significant differences between regions, the areas around the capital (Budapest) are the most fragmented and south-east Hungary is the less fragmented.

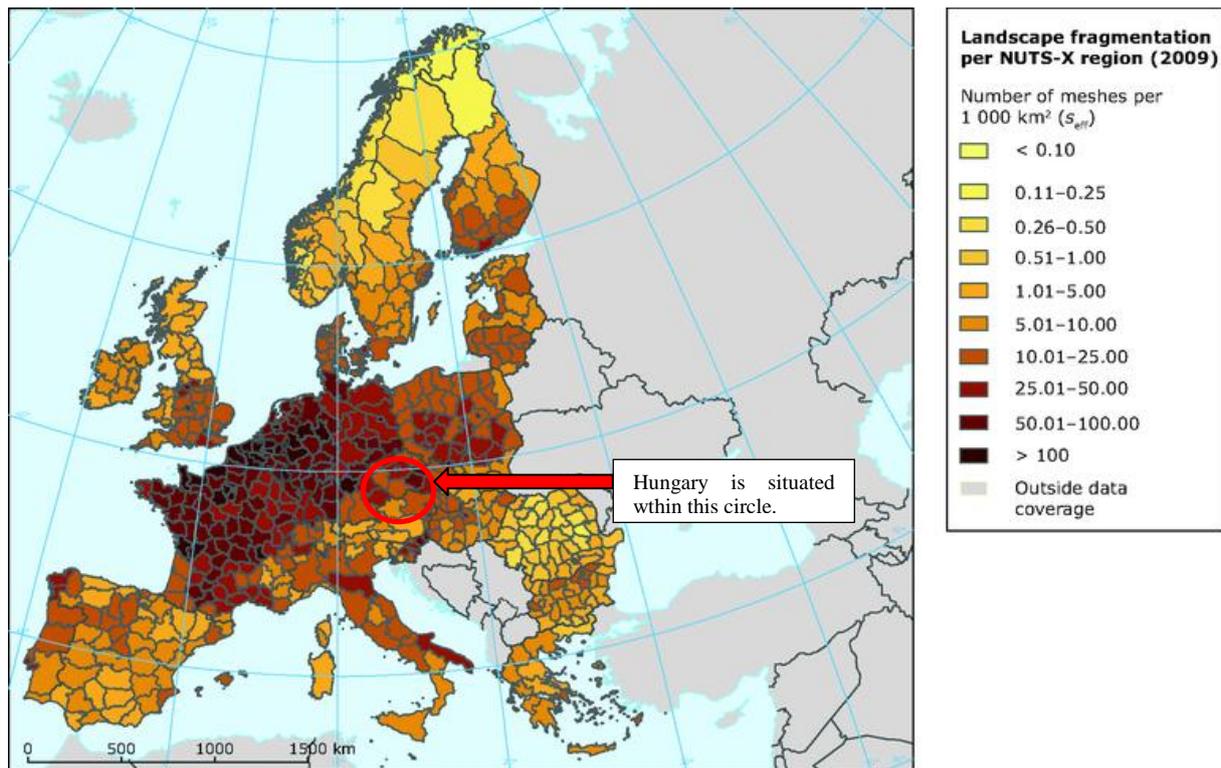


Figure 2. Level of habitat fragmentation in Europe (Source: EEA/FOEN, 2011)

The concept of green infrastructure can still be considered a new approach, green infrastructure aims to create and maintain an ecological network with linking already existing natural areas and create strategically planned areas that are able to provide a broad spectrum of ecosystem services. The backbone of green infrastructure in Hungary is the national ecological network, which incorporated protected areas and Natura 2000 sites complemented with other natural and semi-natural adjacent areas that would account for 36% of the total area of the country.

### Aichi Target 6

***By 2020 all fish and invertebrate stocks and aquatic plants are managed and harvested sustainably, legally and applying ecosystem based approaches, so that overfishing is avoided, recovery plans and measures are in place for all depleted species, fisheries have no significant adverse impacts on threatened species and vulnerable ecosystems and the impacts of fisheries on stocks, species and ecosystems are within safe ecological limits.***

Due to its hydrographical conditions, Hungary has an inland fish stock of great value in Europe. More than 90 roundmouth fish (*Cyclostomata*) and fish species exist in Hungary but only two-third of them are native. This ratio is worse than in the case of other vertebrates.

Vast majority of our waters are rivers coming from and flowing on to neighbouring countries. In case of many upper-section species it is unknown if they have reproducing stocks within the country or if they only occur occasionally. 6 out of our 60 native species have disappeared

from our waters as naturally occurring species (these species are: Beluga, Starry Sturgeon, Russian Sturgeon, Bastard Sturgeon, Pontic Shad, and naturally occurring eels). Their disappearance is caused by habitat transformations happening at the southern borders (primarily due to the construction of hydroelectric power plant at the Iron Gate of River Danube) as well as these species cannot reach the Hungarian waters due to overfishing beyond the borders. The effective conservation of these species is only possible with international cooperation.

Another endangered aquatic group in Hungary is the mountain stream fish fauna, which may be threatened on the long term by the periodically occurring water shortage caused by climate change. Climate change is another broader international problem that cannot be solved only by the implementation of the NBS.

Thirdly, marshland habitats are under major threat, their protection can be ensured by wise and sound habitat management and by preventing either unintentional or deliberate introduction of non-native species in our waters. This problem can be addressed if the relevant targets and actions of the NBS are implemented properly.

Instead of traditional fishing, recreational fishing (angling) has become more significant in recent years. Both activities require the sound management of fish stocks. The shift to native species and the exclusion of non-native fish species in fish stocking as well as elaboration of conservation plans for threatened species are indispensable.

## Aichi Target 7

*By 2020 areas under agriculture, aquaculture and forestry are managed sustainably, ensuring conservation of biodiversity.*

 Implementation has started, limited progress.

Most of the country has favourable agroecological conditions but not all these areas are managed properly according to their natural characteristics.

### Agriculture

Agriculture is one of the most important sectors in the Hungarian economy. The total area of agricultural land is 57.4% of the country's territory (46.5% arable land, 8.2% grassland, 2.7% horticultural land, gardens, vineyards and orchards).

The extent of grasslands of the total agricultural land has shrunk to 8.2% from 12.9% in 20 years. This ratio is less than half of the EU average. However, the proportion of grasslands under protection (included in the Natura 2000 network) is more than double of the EU average. Decreasing number of grazing animals and under-grazing often result in problems in the maintenance of grasslands. Due to the distorting effect of agricultural subsidies and the decrease in the number of grazing animals made farmers turn grasslands to arable lands.

In 2011, the total area of organic (ecological) farming was 2.3% of the agricultural area (124 000 ha), in 2012 it was 2.7% (130 600 ha), which is still low and means that Hungary has not exploited its organic farming potential so far. Therefore the NBS as well as the National Action Plan for the Development of Ecological Farming aim to increase the area of organic farming. The production structure of the organic area is dominated by arable farming and meadow/grassland farming. This proportions have barely changed since 2004.

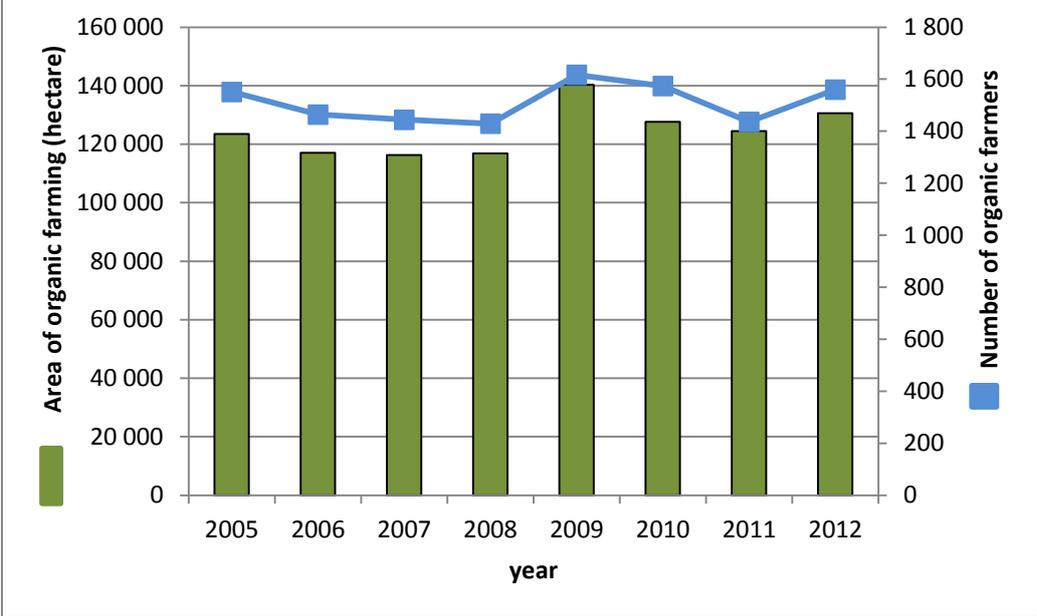


Figure 3. Area of organic farming and the number of organic farmers between 2005-2012 (Source: Hungarian Statistical Office)

In recent years the extent of agricultural area joining the agri-environmental programme has increased to 20% (of the total agricultural area). Within the framework of the agri-environmental programme, the so-called High Nature Value Areas have outstanding role in the conservation of biodiversity. The programme on High Nature Value Areas focuses on the protection of umbrella species and includes complex habitat development plans. The total coverage of High Nature Value Areas is 1.2 million hectare, currently 75% of which is eligible for agri-environmental support. A good indicator species is the Great Bustard (*Otis tarda*), which is an umbrella species of international significance. Hungary has unique population of this species, which has been slightly increasing in recent years.

Soil maintenance is the long term interest of both land users and the society, generally the status of soils can be considered favourable, but soils in agricultural use are threatened by degradation (erosion, deflation, decrease in organic matter). The main reasons behind this phenomenon are incorrect land use and ignorance about state-of-the-art soil protection methods. Long term research of nutrient content of the soil is a good indicator of the state of the soil. In Hungary, the quantity of nutrients taken into the soil annually can be considered more or less constant between 2000-2011.

Integrated pest control can significantly reduce the risks posed by fertilizers and pesticides while strategic planning of pest control and regulatory compliance can greatly contribute to the sensible use of these chemicals. The reduced use of pesticides is a priority area of the EU Environmental Action Programme. Following extended social consultation Hungary has

adopted the National Plant Protection Action Plan in 2012. The Action Plan provides a framework for the introduction of sustainable pesticide use.

**Forestry**

Hungary belongs to the European deciduous forest zone and to the forest-steppe zone. 20.7% of the country’s territory is forest area, including plantations. With this ratio, Hungary belongs to the less forested countries of the EU, therefore the forest area is aimed to be further increased. The National Afforestation Programme aims to have a 25-26% coverage of forests by 2050. In Hungary the share of state-owned forests is 56% and that of community-owned is 1% and 43% of forests are private.

The growing stock of forests has been constantly growing and currently it is 362 million m<sup>3</sup>, which compensates for 5% of the national CO<sub>2</sub> output.

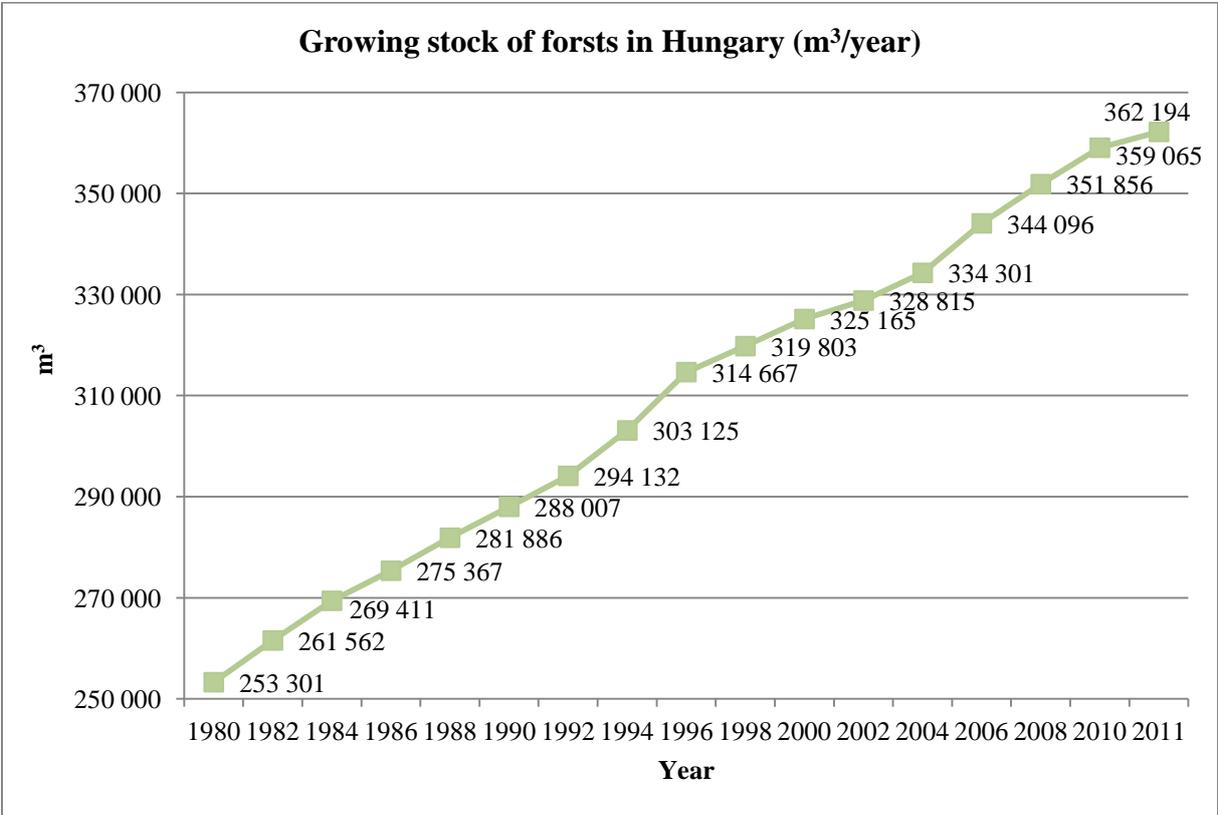


Figure 4. Growing stock of forests in Hungary (Source: National Food Chain Safety Office)

Hungarian forests are classified into 6 categories based on their naturalness: natural forests, close to natural forests, semi-natural forests, transferred forests, semi-plantations and plantations. From biodiversity conservation point of view the first three categories are favourable: natural forests, close to natural forests and semi-natural forests. 59% of the forest areas belong to these categories. Biggest part of the remaining 41% is mainly plantations or semi-plantations, mainly consisting of alien species.

<b>Naturalness categories of forests</b>	<b>Area (ha)</b>
Natural and close to natural forests	462 112
Semi-natural forests	561 819
Transferred forests	126 481
Semi-plantations	655 780
Plantations	127 412
<b>Total</b>	<b>1 933 604</b>

Table 2. Naturalness categories of Hungarian forests in 2013 (Source: National Food Chain Safety Office, Forestry Directorate)

Due to awareness-raising, information dissemination and legislative requirements native species are more often used for afforestation. The coverage of native tree species has increased by more than 1 200 ha annually.

The proportion of forests with management aiming at continuous forest cover has been increasing (102 000 ha in 2011) but further increase is needed. Currently 17 million m<sup>3</sup> dead wood enriches forest habitats. Although forest health is deemed good compared to European standards, game damage is significant due to the too high population of big games.

With regard to the spatial distribution of forests, 60% is situated in blocks bigger than 1000 ha, which is a good size for the conservation of forest habitats. Small tree patches also have an important role in biodiversity conservation as they enrich agricultural landscape or provide stepping stones between habitats.

Almost 25 % of forests have primarily nature conservation function (453 000 ha in total), which is a continuous increase in the last decade.

Forest reserves account for 0.63% (13 000 ha) of the total forest area, at these reserves no intervention and management is permitted.

Some estimations exist for monetary value of forest ecosystem functions: With regard to provisioning services, by cautious estimates the pecuniary value of Hungary's live tree stock exceeds 1.000 billion HUF. Regarding climate regulating services Hungarian forests bind a total of approximately 3.000 tonnes CO<sub>2</sub> each year.

### **Game management**

Game stock structure has changed significantly in recent years. Native big game stock has exceedingly multiplied (Red Deer (*Cervus elaphus*), European Roe Deer (*Capreolus capreolus*), Wild Boar (*Sus scrofa*)) and two alien species (Fallow Deer (*Dama dama*), Mouflon (*Ovis aries*)) have increased as well. Big game population exceeds the natural carrying capacity of our forests and they cause serious damages to forests, mainly through their feeding.

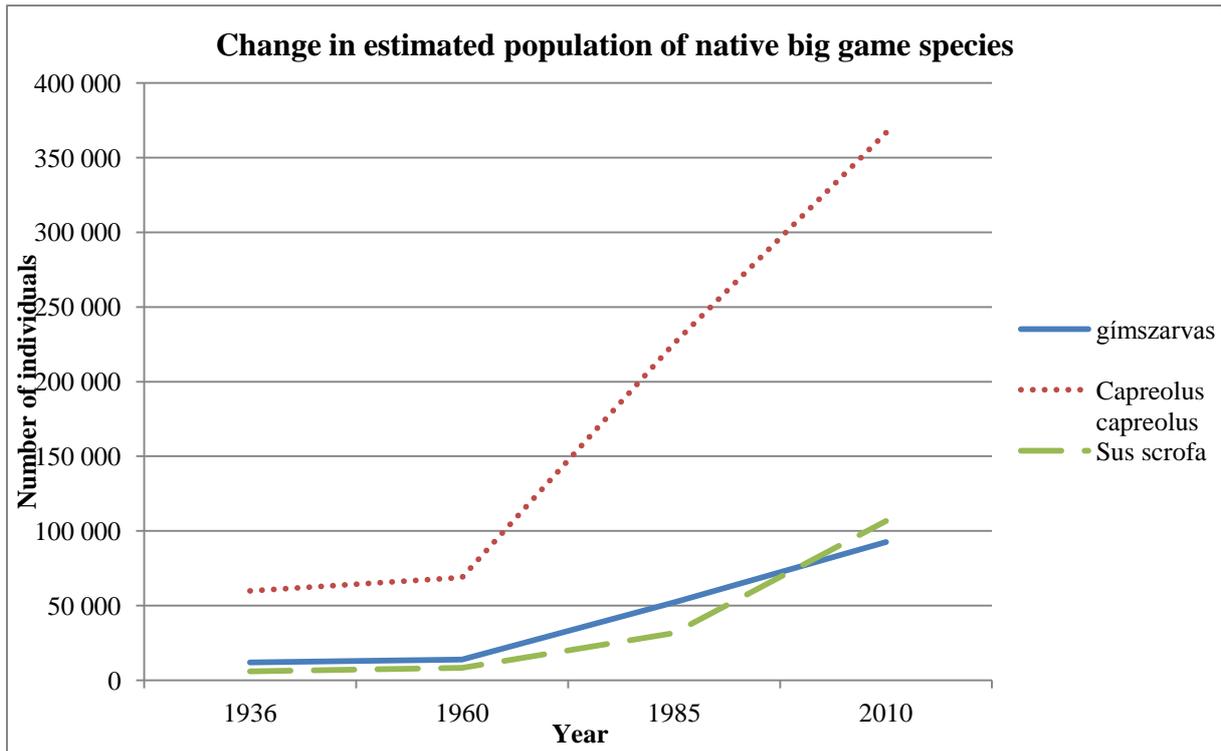


Figure 5. Change in estimated population of native big game species (Data source: National Game Management Database)

As for small games, opposite trends can be observed: the population of important indicator species of agricultural areas, such as European Hare (*Lepus europaeus*), has stabilized at 25% of its original size, while Grey Partridge (*Perdix perdix*), has no viable population any more. The most important cause is habitat loss, and this trend must be stopped.

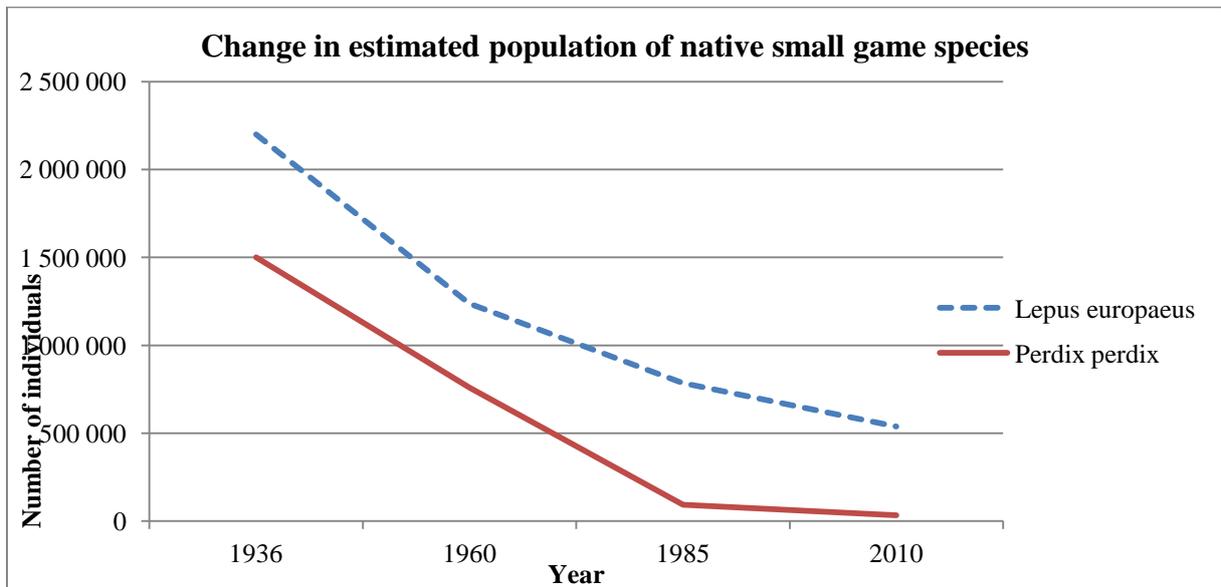


Figure 6. Change in estimated population of native small game species (Data source: National Game Management Database)

Aquatic bird species cannot be protected without international cooperation as the majority is migratory in our region. Although the Greylag Goose (*Anser anser*) populations have increased but almost all *Anatiade* species have decreasing populations.

## Aquaculture

Aquaculture has been practiced in Hungary since the beginning of the last century. In order to compensate for the decreasing captures from inland fisheries extensive fish ponds have been constructed, the total area of fish farms was 26 083 ha in 2012. Extensive fishponds have an important role in inland biodiversity conservation. Carp remains the main fish species produced on water farms, accounting for 76 % of food fish production. The production of food fish was 21.8 thousand tonnes in 2012, the per capita fish consumption was low (3.6 kg/person).

## Aichi Target 8

***By 2020, pollution, including from excess nutrients, has been brought to levels that are not detrimental to ecosystem function and biodiversity.***

 Implementation has started, limited progress.

With regard to pollution, 8% of our rivers and 68% of the surface standing waters (lakes) and 16% of groundwater bodies are in excellent condition and status.

One of the most significant problem in water management both in Hungary and the total drainage basin of the Danube is eutrophication caused by excess nutrients. The ecological status of 60-70% of our surface waters is eutrophic, that decreases its oxygen supply and deteriorates its ecosystem functions. The sources of these excess nutrients come from agriculture and municipal wastewater, and the same amount of nitrogen and phosphorus enter our waters from these sources.

The National Wastewater Treatment Program aims to remove 75% of nitrogen and phosphorus from municipal wastewater while the National Rural Development Strategy clearly indicates the importance of manure management (storage technology, environment control system) of livestock farms, which would have a beneficial effect.

The NBS also sets some pollution-related targets and actions related to agriculture and water management.

## Aichi Target 9

***By 2020, invasive alien species and pathways are identified and prioritized, priority species are controlled or eradicated, and measures are in place to manage pathways to prevent their introduction and establishment.***

 Implementation has started, limited progress.

Controlling invasive species and preventing their further spread in the country is an important conservation objective for Hungary. The collection of reliable data on invasive alien species has been going on for a while. National legislation prohibits the unauthorized introduction of new invasive organisms and regulates that agricultural lands must be maintained free of weeds.

Currently 13.1% of natural and near-natural habitats have been heavily infested with invasive species. According to the habitat-mapping program of the National Biodiversity-monitoring System IAS have been spreading in the country and the most significant invasive species cover larger area in the sampled quadrants, while new species have entered the country during the last decade.

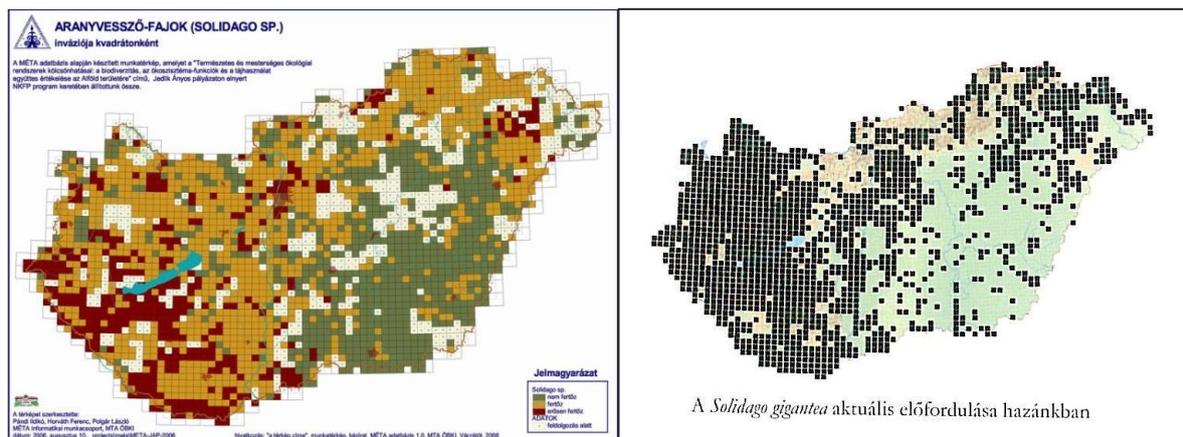


Figure 7. The presence of *Solidago* species in Hungary in 1996 and 2012

Under the coordination of the Ministry of Rural Development, the non-official national list of invasive alien species has been developed. This list specifies those neofiton species that pose a threat to native species of the Carpathian Basin and proactive intervention is necessary to control them. Currently 33 terrestrial and 8 water plants are listed as a threat to out native species. Out of them 17 terrestrial plant species are classified as posing particularly high ecological risk: Box Elder (*Acer negundo*), Tree of Heaven (*Ailanthus altissima*), Bastard Indigobush (*Amorpha fruticosa*), Common Milkweed (*Asclepias syriaca*), Black Locust (*Robinia pseudoacacia*), Giant Goldenrod and Canada Goldenrod (*Solidago gigantea*, *Solidago canadensis*), Asters (*Aster lanceolatus* including *A. tradescantii*, *A. novi-belgii*, *A. ×salignus*), Wild Cucumber (*Echinocystis lobata*), Silver Berry (*Elaeagnus angustifolia*), Fallopias (*Fallopia japonica*, *F. ×bohemica*, *F. sachalinensis*), Green Ash (*Fraxinus pennsylvanica*), Jerusalem Artichoke (*Helianthus tuberosus* s. l.), Himalayan Balsam (*Impatiens glandulifera*), Black Cherry (*Prunus serotina*).

As for animals, the list includes 35 species, 4 mammals, 13 fish, 1 bug, 3 crayfish and 12 molluscs. Particularly dangerous are the Chinese Sleeper (*Perccottus glenii*), the *Hypophthalmichthys* species and the Prussian Carp (*Carassius auratus gibelio*).

An additional list includes 19 species that have not yet entered the country but could pose ecological risk to native species. These species can be found on the official website of

Hungarian nature conservation (<http://www.termesztvedelem.hu/>). The lists is dynamic and may change based on new information regarding IAS.

In most protected areas combatting IAS has been ongoing and these activities have been usually carried out together with other habitat treatments and management activities. Due to the heterogeneous ownership structure of these areas, the different level of IAS infestation and the changing financial conditions the size of area under IAS control show large fluctuations.

As a pilot country Hungary has joined a Europe-wide awareness-raising initiative aiming at internet based data collection about IAS. The NatureWatch programme operated by the European Environment Agency allows citizen to identify and online report IAS.

### Aichi Target 10

*By 2015, the multiple anthropogenic pressures on coral reefs, and other vulnerable ecosystems impacted by climate change or ocean acidification are minimized, so as to maintain their integrity and functioning.*

Not applicable.

Hungary is a landlocked country with no marine areas, therefore this target is not applicable.

### Aichi Target 11

*By 2020, at least 17 per cent of terrestrial and inland water areas, and 10 per cent of coastal and marine areas, especially areas of particular importance for biodiversity and ecosystem services, are conserved through effectively and equitably managed, ecologically representative and well connected systems of protected areas and other effective area-based conservation measures, and integrated into the wider landscapes and seascapes.*

Implementation in good progress.

The **total protected area** (either by national or based on EU legislation) is 22.2% of the territory of Hungary. Considering the different types of protection, the area protected by national law is 9.1%. The so-called Natura 2000 network – which is the area protected on the basis of EU legislation – is 21.39% of the country; however this network to a great extent (90%) overlaps with the areas protected by national legislation. The nature conservation sites of local importance cover almost 0.5% of the country.

In 2011 the completeness of the Natura 2000 network was evaluated and Hungary is among those few member states where sufficient territories have been designated for the conservation of species and habitats of European importance, and no new site designations are necessary. This means that the Hungarian Natura 2000 network was sufficient for all habitats and species

of EU importance, therefore, the designation of our Natura 2000 network was declared complete. Altogether 525 Natura 2000 sites (including Special Protection Areas (SPAs) and Special Areas of Conservation (SACs)) are designated in Hungary.

In total Hungary has 10 national parks, 39 landscape protection areas, and 169 nature conservation areas of national importance. Bogs, mires, alkaline lakes and all caves are protected “ex lege” (by force of the law).

71.5% of all Hungarian inland waters belong to the Natura 2000 network, which is supposed to ensure the wise and sustainable management of these areas.

Hungary has 29 Ramsar sites (under the Convention on Wetlands of International Importance) with an overall extent of 243 000 hectare. At these Ramsar sites priority is given to conserve biodiversity and to properly manage and enhance the naturalness of sodic lakes.

All the above means that Hungary has reached the 17% per cent target set for terrestrial and inland water areas, however progress is still needed regarding the long-term proper and effective management of the designated protected areas.

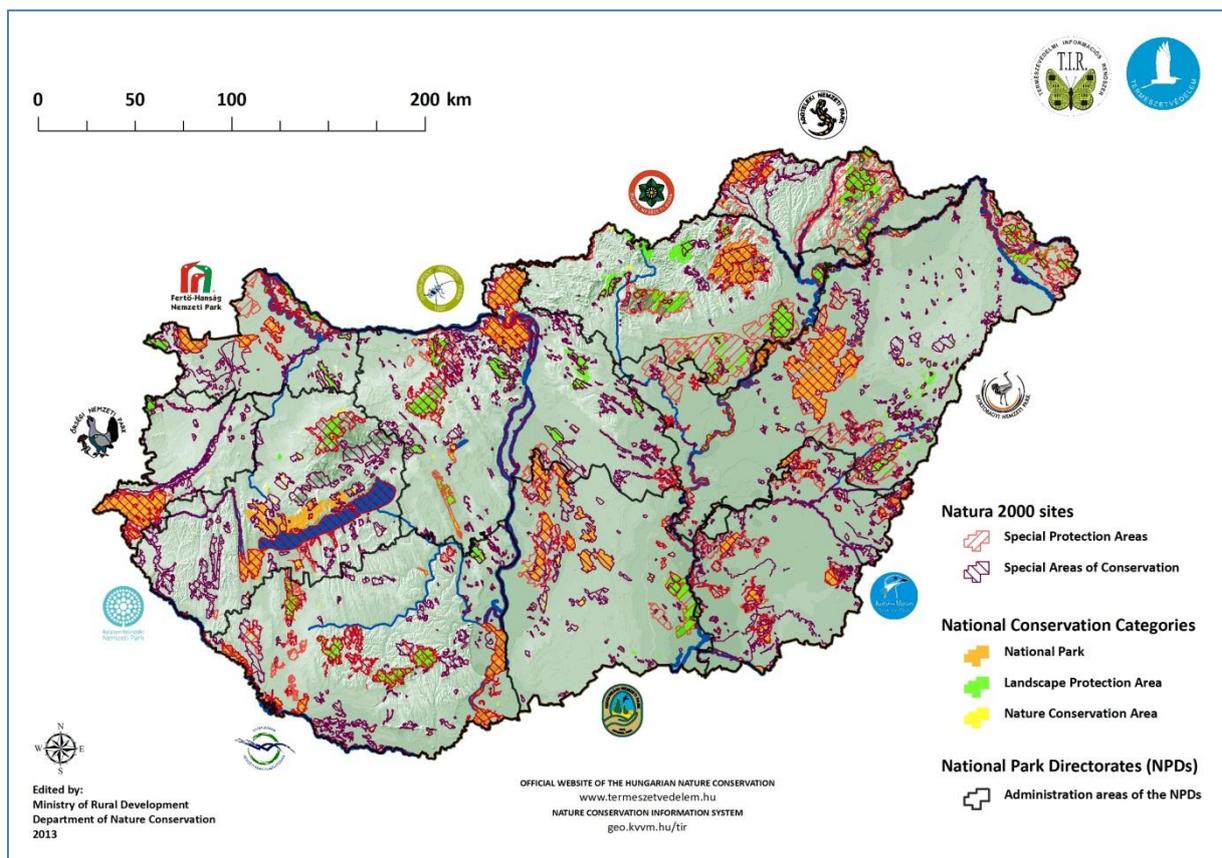


Figure 8. Areas protected either by national or EU legislation (Source: Ministry of Rural Development, 2013)

The conservation status of habitats of EU importance was surveyed and assessed in 2007 and 2013. During this period the methodology used for the assessment has improved, which needs to be taken into account when comparing the outcome of the two assessments. One of the most important advancement is that in 2013 there were no habitats of EU importance that have not been surveyed and assessed.

The categories of conservation status for habitats of EU importance are: favourable, unknown, unfavourable inadequate and unfavourable bad. Habitats in “favourable” conservation status has increased from 11% to 19% between 2007 and 2013. The conservation status of more than 50% of the habitats has improved. On the other hand more than 80% of the habitats of EU importance is still in „bad” or „unfavourable” conservation status.

Most habitat types of EU importance is cultivated area and belong to the forest and grassland categories. The conservation status of all cultivated areas is considered “unfavourable inadequate” or “unfavourable bad” due to inadequate management, abandonment or lack of mowing/grazing, spread of invasive alien species, changes in natural water balance or habitat fragmentation, which influences habitat quality and species composition. As for areas under forest management, 77% of forest habitats is considered “unfavourable inadequate” or “unfavourable bad”, which derive mainly from their bad structural and functional characteristics, very much influenced by prevailing forest management practices. It shall be noted that the apparent upgrade of the conservation status of several habitats is mainly due to a change in survey methodology or obtainment of additional data instead of actual improvement.

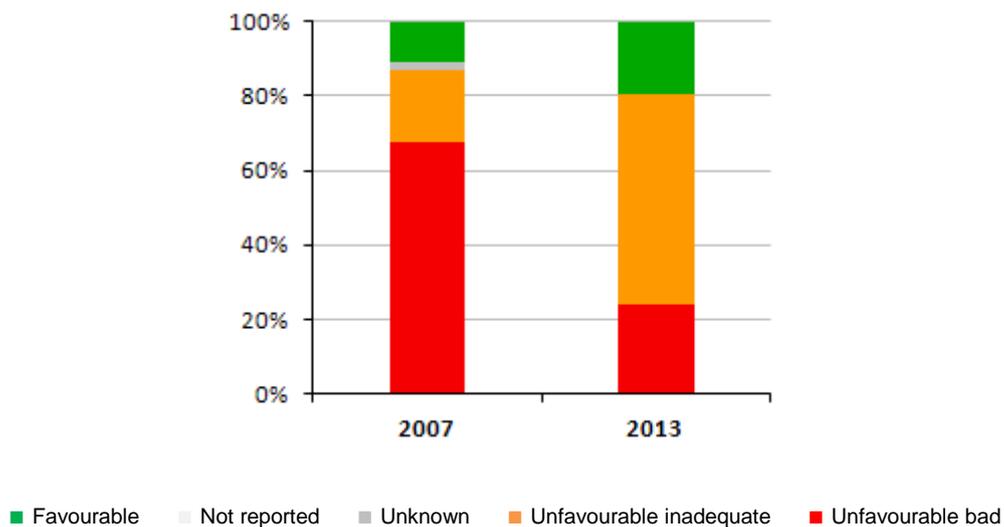


Figure 9. Conservation status of habitats of European importance in Hungary in 2007 and 2013 (Source: National Summary for Article 17 - Hungary)

Management plans lay the foundation of the management intervention to ensure the maintenance and restoration of the conservation status of species and habitats:

- Natura 2000 management plans: Until 2013, 40 management plans for Natura 2000 sites have been elaborated and further 243 management plans are going to be completed till the end of 2014. Moreover, the development of management plans of 14 additional Natura 2000 areas (100 000 ha) have started within Swiss-Hungarian cooperation.
- Conservation management plans of protected areas: As for areas protected by national law, conservation management plans for the 6.7 % of the total protected area is finalized. This includes 7 landscape protection areas (51 102 ha) and 68 nature conservation areas (6485 ha). These management plans are legally binding.
- Non-binding management recommendations have been worked out for 60.3% of the national protected areas.
- Other plans based on the relevant legislation may also be prepared, which have a nature conservation purpose or influence conservation activities (e.g. forest plans, spatial plans, river basin management plans, game management plans).

## Aichi Target 12

***By 2020 the extinction of known threatened species has been prevented and their conservation status, particularly of those most in decline, has been improved and sustained.***

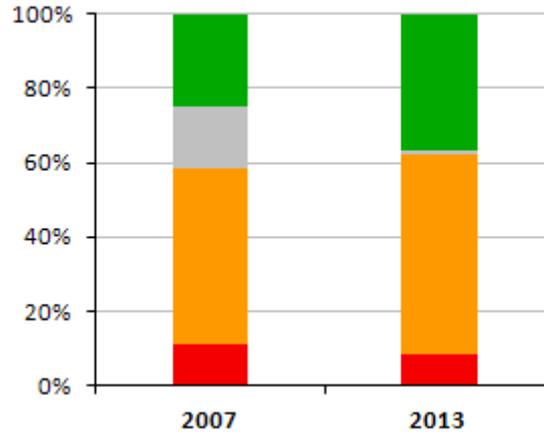


Implementation in good progress.

There are about 2 200 vascular plant species in Hungary and 42 000 animal species. There are also 3 000 - 3 500 fungi species. 1 901 plant and animal species are protected, 273 of them are strictly protected. 58 fungi and 17 lichen species are also protected.

There are several species of EU interest in the Pannonian biogeographical region that occur only in Hungary. Although the Pannonian region covers only 3% of the total area of the European Union, it provides habitat for 17% (226) of the plant and animal species of the EU Habitat Directive and 36% (278) species of the EU Birds Directive.

As for the habitats of EU importance (described under Aichi target 11), the conservation status of species of EU importance was surveyed and assessed in Hungary both in 2007 and 2013. The improved methodology needs to be taken into account when comparing the outcome of the two assessments. Although the knowledge gap regarding species is decreasing, 2% of the conservation status of species of EU interest is still unknown. Altogether 62% of the species are in “unfavourable inadequate” or “unfavourable bad” conservation status and only 36% of them are in “favourable” conservation status. It shall be noted that the apparent upgrade of the conservation status of several species and habitats is mainly due to a change in survey methodology or obtainment of additional data instead of actual improvement. If we consider the real improvement, the conservation status of almost 5% of species (10 out of 208 species) has improved in reality (since 2007) and the status of 4 % of the species (8 species out of 208) has worsened.



■ Favourable   ■ Not reported   ■ Unknown   ■ Unfavourable inadequate   ■ Unfavourable bad

Figure 10. Conservation status of species of European importance in Hungary in 2007 and 2013 (Source: National Summary for Article 17 – Hungary)

According to the Common Bird Census carried out by MME/BirdLife Hungary (see in the table and chart below), most common bird species connected to agricultural habitats had stable populations in 1999-2005, but showed a steady decline since then. Common bird species connected to forest habitats have shown a slight increase since 1999, with a drop back in 2010, probably due to extreme weather conditions in 2010.

Years	Agrarian habitats index (FBI)	SE	Forest Habitat index	SE
1999	100.0%	0.0%	100.0%	0.0%
2000	93.0%	7.1%	110.1%	13.9%
2001	92.6%	7.4%	92.4%	11.3%
2002	88.1%	7.9%	112.8%	17.6%
2003	91.8%	7.7%	104.4%	19.4%
2004	92.2%	8.4%	136.4%	20.7%
2005	102.9%	9.8%	100.2%	17.1%
2006	89.4%	8.6%	121.6%	17.7%
2007	87.2%	8.5%	120.2%	19.4%
2008	92.4%	9.0%	130.3%	19.2%
2009	75.6%	6.3%	114.7%	19.9%
2010	79.3%	8.0%	138.9%	22.1%
2011	64.7%	7.6%	96.5%	23.1%

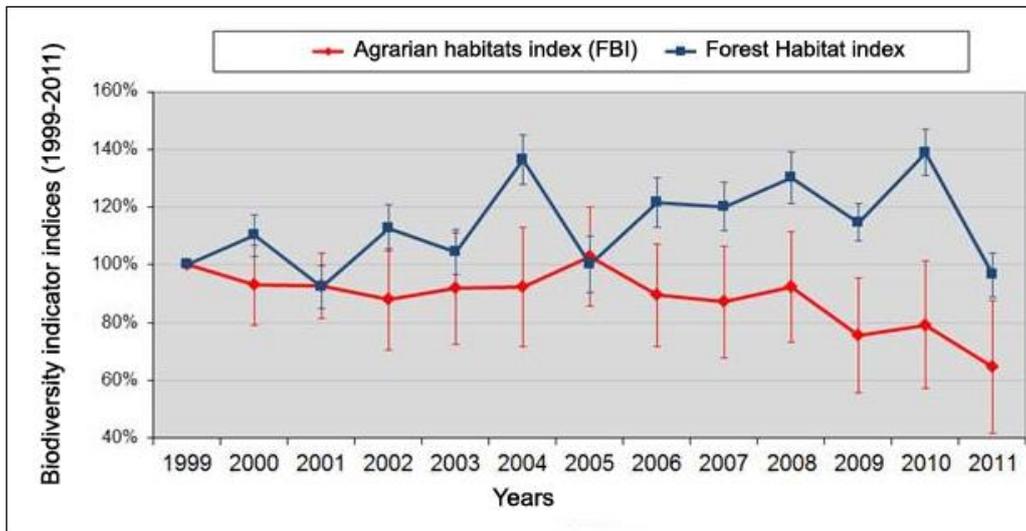


Figure 11. Changes in bird biodiversity index between 1999 and 2011 in Hungarian agriculture and forest habitats

Many rare and endangered species have shown a good population trend in recent years, which is at least partly due to conservation efforts. For example, national populations of Imperial Eagle (*Aquila heliaca*), Saker Falcon (*Falco cherrug*), Red-footed Falcon (*Falco vespertinus*) and Great Bustard (*Otis tarda*) have increased in the past decade.

Several targeted species conservation projects have been carried out in Hungary mainly under the Life programme of the European Union, for species such as *Dianthus diatinus*, Great Bustard (*Otis tarda*), Hungarian meadow viper (*Vipera ursinii rakosiensis*), Saker Falcon (*Falco cherrug*) and Red-footed Falcon (*Falco vespertinus*).

#### **Best Practice Example: Accessible Sky Agreement for conservation of birds**

The Accessible Sky Agreement is a unique initiative without precedence, which brings together electricity distribution companies operating the medium and high voltage grid in Hungary, the ministry responsible for environment (today the Ministry of Rural Development) and BirdLife Hungary. The agreement was signed in February 2008 with the overall goal to contribute to the conservation of natural assets of Hungary by reducing bird casualties caused by power lines (i.e. electrocution and collision of birds). The agreement provides a platform to the parties for assessing the Hungarian electricity grid from a bird conservation perspective, identifying the most dangerous sections, sharing information concerning bird casualties along power lines, and defining priorities for intervention. In the framework of the agreement service providers committed to upgrade their technologies and ensure that the upgrading of the network happens with the use of the best available technology, minimising negative nature conservation impacts to the extent possible.

As a result of the agreement the Act on Nature Conservation No. 53 of 1996 was to ensure that only bird-friendly technologies are applied when power line sections are replaced or substantially renewed. Following the signature of the agreement numerous large-scale projects have been launched targeting the retrofitting of existing power lines and directly involving electricity companies.

Under the agreement, in late 2008 BirdLife Hungary produced a conflict map to prioritise all power lines in Hungary as to the urgency of retrofitting. The priority map, identifying top priority power

lines at a total length of 21 700 km, has been used as the basis for preparing bird-protection investments. In close cooperation between electricity companies and conservation experts, the best available technology to produce or retrofit power lines in a bird-friendly way is constantly updated and new solutions are field-tested. The 2007 best available technology was renewed by April 2011.

### Aichi Target 13

***By 2020, the genetic diversity of cultivated plants and farmed and domesticated animals and of wild relatives, including other socio-economically as well as culturally valuable species, is maintained, and strategies have been developed and implemented for minimizing genetic erosion and safeguarding their genetic diversity.***



Implementation in good progress.

Special emphasis is put on maintaining the genetic diversity of cultivated plants and farmed and domesticated animals, therefore the two national institutions are coordinating and harmonizing the relevant technical activities:

- the [Centre for Farm Animal Gene Conservation](#) (Gödöllő, Hungary) regarding farmed and domesticated animals, and
- the [Centre for Plant Diversity](#) (Tápiószele, Hungary) regarding cultivated plants and the ex situ conservation of wild plant species.

There are several other gene banks and institutes dealing with gene conservation activities in the country. Two technical advisory bodies has been assisting the activities on gene conservation: the Committee for Plant Genetic Resources and the Committee for Indigenous Domesticated Animal Breeds.

The Hungarian Ministry of Rural Development – with the involvement of the Committee for Plant Genetic Resources – prepared a [Strategy for the Conservation of Plant Genetic Resources for Food \(2014-2020\)](#), which was endorsed in 2013. The vision of this technical strategy is “to safeguard on the long-term the diversity of domestic plant and microorganism genetic resources for food without their genetic erosion, and if possible, to explore their real economic values and widely promote their sustainable use under in-situ (on-farm) circumstances as well as to promote their use in research, education and national plant breeding activities”. In order to implement the strategy, the targets and actions are determined with regard to enhanced institutional and financial background; better implementation of international treaties, conventions, strategies and programs; the adoption of a national regulation on landraces in line with the relevant existing EU directives; the collection of landraces and crop wild relatives and associated traditional knowledge, support of research programs and plant breeding, including participatory plant breeding programs based on crop wild relatives and landraces. The implementation of the Strategy for the Conservation of PGRF started by the Collecting Program for 2013-2014 organized by the Centre for Plant Diversity (CPD). During the 4 collection missions were organized in 2013 the collecting team visited more than 30 villages and revealed a range of diversity of locally grown traditional varieties. These varieties and landraces are cultivated by elderly home gardeners and there is an urgent need to conserve their varieties in gene banks. Traditional knowledge still existing

on landrace maintenance may also form a basis for on-farm conservation activities by local NGOs. The collected 250 seed samples (mostly landraces) are stored in CPD and will be regenerated and analysed in 2014.

The Centre for Plant Diversity is the largest seed bank in Hungary. The institute is specialized for ex situ conservation of crops and vegetables and has collected their landraces and crop wild relatives in the last 50 years systematically. In addition, it coordinates the 5-year-long nationally and EU-funded [Pannon Seed Bank Life+ Project](#) (See the below Box for details of the PSB project). This valuable collection is aimed to be complemented with further landraces and crop wild relatives and the existing collection can be used for analysis, research programs as well as by plant breeders and farmers.

#### *Best Practice Example: The Pannon Seed Bank Project*

The 5-year-long project on the “*establishment of the Pannon Seed Bank for the long-term ex situ conservation of Hungarian vascular wild plants*” started in 2010 with co-financing from the Hungarian Ministry of Rural Development and the EU Life+ Fund. The project is coordinated by the Centre for Plant Diversity, which is the largest seed bank in Hungary implemented together with the Ecological and Botanical Institute (Vácrátót) of the Hungarian Academy of Sciences and the Aggtelek National Park Directorate.

The main goal of the project is the long-term seed preservation of the wild vascular flora of the Pannonian biogeographical region. The project aims to achieve this goal through expanding the current functions of Hungary’s main agricultural gene bank, the Centre for Plant Diversity, having more than fifty-years of experience in the conservation of agricultural genetic resources. The establishment of a joint seed bank for the agricultural and wild flora is a good and demonstrative example in line with the objectives of the CBD, as the genetic diversity of the Pannonian biogeographical region’s entire flora, including the wild flora as well as crop and vegetable plants serving human nutrition are conserved at one place. Thus the conservation of these public assets is solved in a cost-effective way by using professional experience, existing knowledge and infrastructure and avoiding unnecessary parallel work. By the end of 2014, at least 800 species (around 4000 accessions) – of the species of the wild native flora will be collected.

Seed samples will be safeguarded in the Base and Active storage facilities of the Pannon Seed Bank established at the Centre for Plant Diversity. The Base collection serves the long-term conservation of reserve samples, while the Active collection helps to facilitate Pannonian research and distribution of research material after the finalization of the project.

In order to achieve full safety, a duplicate store of the Base collection is established inside a manmade mine hole inside the Esztramos mountain of the Aggtelek National Park Directorate to avoid risks of unexpected environmental hazards. The duplicate store of the Active seed collection is established at the Ecological and Botanical Institute. In order to show how the genetic material preserved in the Pannon Seed Bank could be utilized in nature, a model reintroduction of certain species of the sand steppe community typical to the Pannonian biogeographical region is carried out at Natura 2000 priority habitats (Pannonic sand steppes and inland dunes) of the Kiskunság National Park in Central-Hungary.

More information: <http://www.pannonseedbank.hu/>

In Hungary, 35 protected domesticated (farm) animal breeds and 1 endangered animal breed is in the official registration. The protection of these breeds is in state responsibility. Due to the previous year's persistent work, the number of the protected farm animal breeds has been growing slowly and gradually. However, in order to safely maintain these animal breeds, there numbers still need to be increased.

In order to raise awareness an agrobiodiversity sub-website was established in 2010 under the national CHM (<http://www.biodiv.hu/hazai-genmegorzes>), which is regularly updated. It is important to mention that the importance of genetic resources and diversity has become more and more popular in the last 2-4 years (greater media presence, more awareness and interest of everyday people can be observed). Therefore there has been an emerging need for local varieties by everyday people (e.g. on the market and for household gardens), restaurants as well as by small-scale ecological farmers. However, there is still a lot to do regarding in-situ and on-farm conservation of Hungarian genetic resources.

### Aichi Target 14

***By 2020, ecosystems that provide essential services, including services related to water, and contribute to health, livelihoods and well-being, are restored and safeguarded, taking into account the needs of women, indigenous and local communities, and the poor and vulnerable.***



Implementation has started, limited progress.

In order to safeguard ecosystem services, it is important to know their status and changes in these services. Based on a large-scale vegetation mapping carried out between 2003 and 2006 across the micro-regions of Hungary, the Natural Capital Index (NCI) was evaluated in 2008 (see NR-4 for relevant data). However, since this large-scale assessment no country-wide evaluation has been carried out yet and for most habitat types countrywide representative updated data is lacking. Therefore, Objective 7 of the NBS (2014-2020) aims to perform again a large-scale vegetation mapping across the country as well as to determine the Natural Capital Index.

Under the Environment and Energy Efficiency Operational Programme (EEEOP) mapping and assessment of ecosystem services are planned to be supported in the period of 2014-2020 in order to get better understanding of the status of ecosystems and their services.

Although no countrywide assessment is available, several research projects aiming at the qualitative assessment of ecosystem services has been carried out in different regions, e.g. in the Danube-Tisza Interfluve in Central Hungary (Homokhátság), in Órség-Vendvidék of West Hungary and Szatmár-Bereg in East Hungary.

#### ***Case Study: Qualitative evaluation of ecosystem services in the Danube-Tisza Interfluve in Central Hungary***

The two studied case study sites (Homokhátság and Alpár-Bokros) are located in the Danube-Tisza

Interfluve. The first site – the Homokhátság – lies on one of the highest and driest areas of the sand ridge of the Interfluve and incorporates three settlements of the Homokhátság High Nature Value Area. This site covers a very heterogeneous landscape with lots of rare and endemic species. Natural habitats (typical Pannonian dry grasslands and poplar-juniper forest patches) are mosaic with pastures, fragments of small-scale arable land, orchards, vineyards and expanding forest plantations. The second case study area – the Alpár-Bokros wetland – lies at the meeting point of the sand ridge and the Tisza-valley. It consists of two backwaters of River Tisza, the surrounding wetlands and the eastern edge of the dry and sandy uplands. Intensive agriculture (arable and row crop production, animal husbandry, orchards and vineyards) and forest plantations were typical in the area, but since 1998 the deeper lying parts of the site has undergone an ecological restoration project that aimed at reconstructing the valuable natural habitats and improving the flood protection service. Both sites are subjects of long-term ecological research, protected by law, significant portion belongs to the Kiskunság National Park and are leased and cultivated by local farmers, which causes tensions between nature conservation and agriculture at the local level.

In the Homokhátság case study area provisioning services were highly appreciated by interviewees. Food and fodder production (especially grazing, vine, fruit arable crop production) was highly valued, as well as biomass production for building material and fuelwood. Genetic resources (especially old varieties and landraces) were thought to be an important source of future adaptation to climate change. Water regulation and erosion control were named as the key regulating services, with both perceived to be deteriorating. A wide range of cultural services were listed in the interviews, e.g. the sense of place, the cultural heritage represented by the special settlement system (homesteads) adapted to local ecological circumstances, and emerging services such as environmental education and eco-tourism. No supporting services were addressed by the research participants.

In the Alpár-Bokros wetland area provisioning services gained a similarly high status. Food and fodder production, timber, ornamental resources and genetic resources were all mentioned, although the first two categories were perceived as the most important ones. Among regulating services flood protection and water regulation services were appreciated the most. Some interviewees also mentioned the local climate regulation effect of the river and its backwaters. Similarly to the Homokhátság case, a large number of cultural services were listed, e.g. sense of place, recreation, eco-tourism, environmental education, although different stakeholder groups had contradicting arguments about the local importance of these services. Many interviews addressed supporting services provided by the regular floods (i.e. nutrient cycling and soil formation).

In conclusion, comparing local peoples' knowledge and ecological scientists' knowledge similar perceptions were found of the importance and ongoing changes of provisioning and cultural services. There is, however, a significant gap between local and expert knowledge in relation to regulating and supporting services: many of these services are perceived as very important by experts but hardly mentioned by local resource users. This suggests that there is a lack of consciousness about regulating and supporting services within the local community, which results in resource users being unable to judge the real importance of these services and fail to take them into account in their management decisions. Local stakeholders usually do not consider consciously those ecosystem services which are easily available and have been relatively stable in the last decades. Local resource users are doubtful about their endangered status and it is difficult to motivate them to apply less intensive resource use practices to maintain the flows of these services (especially if they are interested in increasing the yields). Scarce ecosystem services are increasingly considered to be the priceless gifts of nature – benefits which can be enjoyed free of charge if the ecosystem is healthy, and which cannot be replaced if the ecosystem is damaged.

*Qualitative valuation of ecosystem services by River Maros in Southeast Hungary*

In 2011 and 2012 qualitative valuation of ecosystem services were conducted in the floodplain of River Maros in Southeast Hungary. The overall objective was to investigate and assess how local stakeholders perceive their natural environment, what they find valuable and important for their "well-being". Semi-structured interviews were conducted with local residents and land users about the ecosystem services.

It has become clear that key importance was given to provisioning services. The importance of production of field crops, vegetable cultivation and fruit production was highlighted and the excellent local agricultural potentials were emphasized. However, the decreasing production and husbandry was also listed as the main concern for the locals in general. The attachment of the locals to their natural environment was strong as well as the related cultural services (e.g tourism, angling, tracking). Regulatory and supporting services were less frequently indicated, although some of them were perceived explicitly beneficial for well-being, such as flood-protection, using river mud for healing effect and soil fertilizer effect of regular flooding.

### Aichi Target 15

***By 2020, ecosystem resilience and the contribution of biodiversity to carbon stocks has been enhanced, through conservation and restoration, including restoration of at least 15 per cent of degraded ecosystems, thereby contributing to climate change mitigation and adaptation and to combating desertification.***



Implementation has started, limited progress.

Aichi Target 15 was integrated into Objective 6 of the NBS, which aims “*the harmonized development of the elements of green infrastructure in order to maintain and enhance the operability of ecological systems and to promote the adaptation to the effects of climate change, including the improvement of the connections between areas of ecological and landscape ecological function, as well as the reconstruction of potential landscape elements together with the restoration of degraded ecosystems*”. Degraded ecosystems with ecological functions are to be determined by 2020 and at least 15 % of these ecosystems are to be restored. Therefore, the necessary policy and regulatory frameworks need to be established.

By using the financial supports in the period of 2007-2013, habitat reconstruction and habitat development was carried out on 5% of the Natura 2000 areas and 10% of the areas protected by national legislation. Several species conservation projects (partly supported by the EU Life+ fund) have been going on regarding important endangered species such as *Dianthus diathnus*, *Otis tarda*, *Vipera ursinii rakosiensis*, *Falco cherrug* and *Falco vespertinus*.

### Aichi Target 16

***By 2015, the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization is in force and operational, consistent with national legislation.***

 Implementation has started, limited progress.

Hungary signed the Nagoya Protocol in June 2011. In order to be among those states, whose ratification counts to the entry into force of the Protocol, the Hungarian Promulgation Act of the Nagoya Protocol (Act No. VIII of 2014) was approved on 4 February 2014 and **Hungary deposited its ratification instrument on 30 April 2014.**

Being a Member State of the EU, with regard to *user measures*, the European Union's legislation (EU Regulation of the European Parliament and of the Council on compliance measures for users from the Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilisation in the Union). will apply to Hungarian users of genetic resources.

With regard to *access measures*, Hungary has started discussions on the development of its domestic legislation on access to Hungarian genetic resources, however, the legislation is in preliminary phase yet.

### Aichi Target 17

*By 2015 each Party has developed, adopted as a policy instrument, and has commenced implementing an effective, participatory and updated national biodiversity strategy and action plan.*

 Implementation in good progress.

Hungary has developed its new National Biodiversity Strategy, which was adopted by the Government in February 2014. The final adoption will take place after the Parliamentary elections in April 2014. According to these plans the official implementation phase will start in 2014.

The NBS has been developed with wide participation (See Chapter 2.2) and it can be considered as an effective tool based on the statement of the independent impact assessment of the Strategy.

### Aichi Target 18

*By 2020, the traditional knowledge, innovations and practices of indigenous and local communities relevant for the conservation and sustainable use of biodiversity, and their customary use of biological resources, are respected, subject to national legislation and relevant international obligations, and fully integrated and reflected in the implementation of the Convention with the full and effective participation of indigenous and local communities, at all relevant levels.*



Implementation has started, limited progress.

In 2012 the Act on Hungaricums was adopted, which guarantees the protection of the treasures, including specific cultural and natural assets, products and associated traditional knowledge of the Hungarian people. Based on this legislation, the documentation of Hungarian treasures and associated traditional knowledge has started.

There have been several events related to traditional knowledge, such as a series of ethnoecological seminars with invited Hungarian and foreign experts on traditional knowledge and nature conservation. Moreover, some websites also deal with traditional knowledge and practices, such as the one of the Landscape and People Association (<http://tajesember.hu/>).

### Aichi Target 19

***By 2020, knowledge, the science base and technologies relating to biodiversity, its values, functioning, status and trends, and the consequences of its loss, are improved, widely shared and transferred, and applied.***



Partially implemented.

The Hungarian Biodiversity-monitoring System (HBmS) has been in operation since 1998. It monitors the status of biodiversity and its long-term changes with carefully chosen indicators, standardized methods and samplings are carried out on permanent locations. Datasets derived from this system are integrated in the Conservation Information System, a complex GIS supported system with additional information about wildlife protection, biodiversity monitoring, geology, landscape protection and property management.

After Hungary's accession to the EU the reporting commitments have increased. To comply the new responsibilities the HBmS had to be expanded with the monitoring of species and habitats of EU interest and the sampling methodology had to be adjusted. Currently sampling protocol for 80% of the species and habitats of EU interest has been developed. Despite ongoing data collection there are some species of EU interest we do not have complete data about. These species are usually extremely rare or on the contrary spread countrywide, or can be difficult to monitor with standardized methods. In 2013, conservation status of 2% of the 208 species of EU interest was classified „unknown”, which is a decrease in the knowledge gap compared to year 2007. Another big step forward since 2007 is that there are no habitat types of EU interest classified „unknown”, which means that in 2013 there was no habitats of EU importance that have not been surveyed and assessed.

An Internet based information system (<http://www.vadonleso.hu/>) was initiated in 2009, where data about wildlife (occurrence of species) is uploaded voluntarily by citizens. The website is getting more and more popular and the number of visitors is increasing. The information is then verified by conservation experts and streamed into the NBmS.

It is important to mention that Hungary became a member of the (IPBES) in November 2012. Currently, two Hungarian expert are members of the Multidisciplinary Expert Panel of IPBES and several experts have been nominated for the task forces.

### **Aichi Target 20**

*By 2020, at the latest, the mobilization of financial resources for effectively implementing the Strategic Plan for Biodiversity 2011-2020 from all sources, and in accordance with the consolidated and agreed process in the Strategy for Resource Mobilization, should increase substantially from the current levels. This target will be subject to changes contingent to resource needs assessments to be developed and reported by Parties.*

 Implementation has started, limited progress.

In order to implement Aichi Target 20, an objective was integrated in the National Biodiversity Strategy 2014-2020 to “*enhance integration of biodiversity conservation in Hungary’s international engagements, such as when providing financial support to developing countries*”.

In March 2014 the Government adopted the International Development Cooperation and Humanitarian Aid Strategy of Hungary for the period of 2014-2020. According to this strategy Hungary tries to assist the achievement of the Millennium Development Goals. Subject to its capacity and other conditions, Hungary tries to play a role in international donor activities by taking into account issues such as responsible management of natural resources and environmental health considerations.

#### ***Best Practice Example: Research and development cooperation in Southeast Asia in the field of gene conservation***

The Centre of Farm Animal Gene Conservation (former name: Research Institute for Small Animal Breeding) deals with gene conservation and sustainable utilization of traditional animal breeds and the development of ecological farming systems. Activities of the institute include the coordination of small animal breeders; propagation and distribution of breeding animals; development and management of gene bank of threatened domestic animal breeds; research and application in the fields of small animal production, environmental sustainability and ecological agriculture; and production of safe and high quality products from traditional breeds. In 1997, the institute participated in establishing the Association of Hungarian Small Animal Breeders, which is responsible for organizing and supervising genetic conservation programs as well as the breed collection and registration of elite, grandparent and parent stocks of old Hungarian poultry breeds.

#### **Hungary-Vietnam cooperation regarding small animal gene conservation**

The Centre of Farm Animal Gene Conservation and the Association of Hungarian Small Animal Breeders started developing collaboration with Vietnam already in 1998, using financial support from the former Ministry of Agriculture and Ministry of Foreign Affairs of Hungary as well as many bilateral (Sciences and Technology) and TIED AID projects. In the past 4 years, the institute has gained significant achievements in genetic conservation of traditional Hungarian breeds, parallel to

improving the animal biodiversity and genetic resources of Vietnam.

**Activities in 2010:** The Centre of Farm Animal Gene Conservation and the Association of Hungarian Small Animal Breeders successfully conducted a Micro-project “Expansion of bilateral breeding cooperation for the old Hungarian poultry breeds to South-Vietnam, to develop sustainable poultry production of underprivileged regions” financed and supervised by the Embassy of Hungary in Hanoi. The task of this micro-project was to expand the HU-BA old Hungarian poultry breeds to South Vietnam and to develop sustainable poultry production of underprivileged regions, regarding conservation of the indigenous animal genetic resources. Within 2 years (2009-2010), the guinea fowls from POREC (Thuy Phuong poultry centre – Hanoi) were transferred to Dong Nai (Southeast-Vietnam) and Can Tho (Southwest-Vietnam). In Dong Nai, possibilities to utilize guinea fowl in small enterprises were studied. In Can Tho, guinea fowl were conserved in Can Tho University, an important education centre located in integrating the Mekong Delta. Guinea fowl population, at first, served as an educational material for students to practice and do scientific researches to obtain MSc/PhD or post-graduated diploma, resulted in collection of huge data about adaptation of guinea fowl to tropical climate and rearing technology. This step placed an important role in preliminary introduction of Hungarian guinea fowl to the local peasants and widening the rearing model over the Mekong Delta area later.

**Activities in 2011:** The Centre of Farm Animal Gene Conservation and the Association of Hungarian Small Animal Breeders continued to introduce the partridge coloured Hungarian chicken to the North-Vietnam (National Institute of Animal Husbandry-Poultry Research Center, NIAH-POREC), through a Sciences and Technology bilateral project. After successful adaptation experiments of the partridge coloured Hungarian chicken, the project moved forwards to focus on establishing the hybrids by crossing the partridge coloured Hungarian chicken and MIA (local Vietnamese breed). The final cross-bred flock was introduced to Vietnamese small producers while the pure partridge colour Hungarian flocks remained at Thuy Phuong Poultry Centre as conserved population. The newly cross-bred flock was adapted well the local climate and suitable for low cost family farming, a traditional system in Vietnam. The project provided the local Vietnamese producers and peasants in sub-tropical regions another choice of chicken breed with special quality to use in small-scaled poultry production. In addition, the project supported many training programs for local producers and peasants to improve their knowledge and skills in the fields of qualified and safe poultry production from farm to table as well as proper breeding technologies.

The project also worked on identification of a new potential breeding region in Mekong Delta, in order to extend the conserved population of pure partridge coloured Hungarian chickens. In 2011 Hungarian experts took part in the ILDEX conference “Livestock production industry update - opportunities and challenges” in Ho Chi Minh, Vietnam. Hungarian experts made the presentation about sustainable poultry production of traditional breeds.

**Activities in 2012:** The Centre of Farm Animal Gene Conservation and the Association of Hungarian Small Animal Breeders, together with Can Tho University organized the 7th Vietnamese-Hungarian international conference on Agricultural Research for Development (“International EU-SEA Scientific Symposium on ARD with special regards to Ecological Farming System”), using the budget of EU\_SEA project. This conference provided an opportunity for the Vietnamese, Laos, Cambodian and European experts to exchange experiences. The Hungarian institute was in contact with Tra Vinh University to develop a new breeding region of partridge coloured Hungarian chicken in Tra Vinh.

**Activities in 2013:** Following the previous year’s successful cooperation, the Centre of Farm Animal Gene Conservation and the Association of Hungarian Small Animal Breeders have been developed a project with special regards to poultry research for development in disadvantageous regions of

Mekong Delta, to introduce the partridge coloured Hungarian chicken to Southwest Vietnam. This was the first breeding and conservation program of partridge coloured Hungarian chicken in real tropical area.

#### **Hungary-Southeast Asia cooperation regarding small animal gene conservation**

The Centre of Farm Animal Gene Conservation and the Association of Hungarian Small Animal Breeders established an official cooperation with the Institute of Agriculture, Forestry, Animal Husbandry and Fish Farming Development of Laos in 2006. Since then, the trilateral cooperation between Hungarian, Vietnamese and Laos institutions has been developed. The Hungarian partners successfully coordinated local professional exchange programs between Laos and Vietnamese specialists and provide breeding advices. An example is that the Hungarian Bronze and Copper Turkey breeds were imported to Laos.

**All these projects conducted in Southeast Asia were strictly supervised to ensure that actions would not harm the local genetic resources of the Southeast Asian regions, but consistently follow the original principles that to enrich and protect the local biodiversity of both Hungary and countries which imported Hungarian indigenous breeds, to improve the functioning of the sustainable, low-cost and environment friendly animal production. Since no local guinea fowl and turkey breeds exist in Southeast Asia, the introduction of these breeds would not disturb the local genetic resources.**

More information: <http://www.mgegodollo.hu/>

### **3.2 What has been the contribution of actions to implement the Convention towards the achievement of the relevant 2015 targets of the Millennium Development Goals in your country?**

Hungary's advancement towards the relevant targets of Millennium Development Goal 7 (Ensure Environmental Sustainability) is summarized as follows:

#### **Progress towards MDG Target 7.A: Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources**

Environment and conservation related strategies and action plans – the National Biodiversity Strategy 2014-2020, the National Environmental Program 2014-2020, the National Nature Conservation Master Plan 2014-2020 – put a clear emphasis on the importance of biodiversity and sustainability and integration of the relevant principles is achieved. However, these strategic objectives often fail to get fully transferred into practice, which is the biggest challenge at national and local levels as well.

The National Sustainable Development Framework Strategy 2012-2024 and the National Rural Development Strategy (2012-2020) (also called: “The Constitution of the Rural Areas”) create a sound and comprehensive framework for the integration of the principles of sustainable development into other country policies and programmes.

**Progress towards MDG Target 7.B: Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss**

Hungary's protected area system has been established, the task for the future is to focus on the proper management of these areas as well as the restoration of key degraded habitats and the expansion of transboundary protected areas. The total area protected either by national or EU legislation is 22.2% of the territory of Hungary. The area protected by EU legislation (the Natura 2000 network) was sufficient for all habitats and species of EU importance, therefore, the designation of our Natura 2000 network was declared complete.

As for habitats and species of EU importance, the conservation status of species of EU importance was surveyed and assessed in Hungary both in 2007 and 2013. The improved methodology needs to be taken into account when comparing the outcome of the two assessments. An important advancement compared to 2007 is that in 2013 there was no habitats of EU importance that have not been surveyed and assessed. The categories of conservation status for habitats of EU importance under this biogeographical assessments are: favourable, unknown, unfavourable inadequate and unfavourable bad. Habitats in "favourable" conservation status has increased from 11% to 19% between 2007 and 2013. The conservation status of more than 50% of the habitats have improved. On the other hand more than 80% of the habitats of EU importance is still in „bad" or „unfavourable" conservation status. Although the knowledge gap regarding species has decreased since 2007, 2% of the conservation status of species of EU interest is still unknown. Altogether 62% of the species are in "unfavourable inadequate" or "unfavourable bad" conservation status and only 36% of them are in "favourable" conservation status.

Out of the 2 200 vascular plant, 42 000 animal and 3 000 - 3 500 fungi species of Hungary 1 901 plant and animal species are protected, 273 of them are strictly protected by legislation. 58 fungi and 17 lichen species are also protected.

## 4 APPENDICES

### Appendix I – Information concerning the reporting Party

#### 4 APPENDICES

#### Appendix I – Information concerning the reporting Party

<b>Contracting Party</b>	<b>Hungary</b>
<b>National Focal Point</b>	
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<b>Submission</b>	
Signature of officer responsible for submitting the national report	
Name of officer responsible for submitting the national report	Katalin Tóth, Deputy State Secretary, Ministry of Rural Development
Date of submission	“30” April 2014

## **Appendix II – Process of preparation of the fifth national report**

The fifth national report was prepared by the Biodiversity and Gene Conservation Unit of the Ministry of Rural Development with the coordination of the National Focal Point to the CBD.

The data collection for the fifth national report coincided with the revision process of Hungary's National Biodiversity Strategy (2009-2014) in 2013. During the 1-year process the biodiversity status and trends were evaluated in details with the involvement of relevant experts from various sectors, such as nature and biodiversity conservation, agriculture, forestry, landscape, water and fish management. Several reports, studies, statistical data and scientific literature were revised and regular personal consultations and meetings were organised to discuss emerging questions. If needed, supplementary information were provided by scientific and research institutions and experts. As most information was available only in Hungarian, the evaluations had to be translated into English for the national report.

After compilation of the draft national report, it was circulated to relevant departments for review. The inputs, suggestions and comments received have been incorporated in the final report.

## Appendix III – Sources of information

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National Environmental Program 2014-2020

National Food Chain Safety Office, Forestry Directorate: Forest resources and forest management in Hungary (2013)

National Forest Strategy 2006-2015

National Game Management Database

National Nature Conservation Master Plan 2014-2020

National Plant Protection Action Plan (2012)

National Rural Development Strategy 2012-2020

National Sustainable Development Framework Strategy 2012-2024

National Transport Strategy 2013-2030

National Water Strategy (2013)

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## **Appendix IV – National implementation of the thematic programmes of work and plans under the Convention on Biological Diversity or decisions of the Conference of the Parties related to cross-cutting issues.**

The implementation of two Programmes of Work (PoW) are highlighted in this chapter as among the CBD thematic programmes these two have the most direct relevance to Hungary. One of them is related to protected areas and the other to agricultural biodiversity.

### **Programme of Work on Protected Areas**

The [Hungarian Action Plan for Implementing the PoW on Protected Areas \(2012-2020\)](#) was submitted to the SCBD in March 2012. It identifies the following priority actions for by the end of the decade:

- Develop management plans for protected areas in order to conserve and sustainably use biodiversity at these areas;
- Expand transboundary protected areas; and
- Restore key degraded habitats.

See relevant sections of Chapter 3.1 for further details about the implementation of the PoW.

### **Multi-year Programme of Work on agricultural biological diversity**

In order to assist the implementation of the PoW on agricultural biological diversity and Aichi target 13 the [Hungarian National Strategy for the Conservation of Plant Genetic Resources for Food \(2014-2020\)](#) was endorsed by the Hungarian Minister of Rural Development in 2013. The vision of this technical domestic strategy is backed up by 14 targets, which provide a comprehensive background for the conservation of plant genetic resources for food. Targets refer to enhanced institutional and financial background; the better implementation of international treaties, conventions, strategies and programs; the adoption of a national regulation on landraces in line with the relevant existing EU directives; the collection of landraces and crop wild relatives and associated traditional knowledge, support of research programs and plant breeding, including participatory plant breeding programs based on crop wild relatives and landraces.

## Appendix V – List of acronyms

ARD	agricultural research for development
CBD	Convention on Biological Diversity
CPD	Centre for Plant Diversity
EEEOP	Environment and Energy Efficiency Operational Programme
EU	European Union
GMO	genetically modified organism
IAS	invasive alien species
HBmS	Hungarian Biodiversity-monitoring System
IPBES	Intergovernmental Platform on Biodiversity and Ecosystem Services
MDG	Millennium Development Goal
MME	BirdLife Hungary
NBS	National Biodiversity Strategy 2014-2020
NEP-4	Fourth National Environmental Programme 2014-2020
NGOs	non-governmental organizations
NFCSO	National Food Chain Safety Office
NRDS	National Rural Development Strategy 2012-2020
NSDFS	National Sustainable Development Framework Strategy
PGRF	Plant Genetic Resources for Food
PGRFA	Plant Genetic Resources for Food and Agriculture
PoW	Programme of Work
PSB	Pannon Seed Bank
SCBD	Secretariat of the Convention on Biological Diversity

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