

COMMUNITY- AND NATURE-BASED DEVELOPMENT STRATEGY OF THE POĽANA BIOSPHERE RESERVE

Strategy recommendations

Project: Community- and nature-based improvement of
Biosphere Reserves along the Hungarian-Slovak border to
jointly protect and enhance biodiversity (HUSK/2302/1.2/067)

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1. Introduction

1.1. About the #biospherereserves project

Biosphere Reserves (BRs) are designated protected areas established under UNESCO's Man and the Biosphere Programme. Their mission – to foster and demonstrate a balanced relationship between people and nature – is based on the recognition that biodiversity conservation is only possible with the active cooperation of local communities.

The project entitled Community- and nature-based improvement of Biosphere Reserves along the Hungarian–Slovak border to jointly protect and enhance biodiversity (#biospherereserves), funded by the Interreg VI-A Hungary–Slovakia Programme, aims to strengthen the role and importance of biosphere reserves along the Hungarian–Slovak border in biodiversity conservation by actively involving local communities and harnessing the potential of nature-based solutions (NbS). The project involves three biosphere reserves located along the border: Pilis BR and Fertő Lake BR on the Hungarian side, and Poľana BR in Slovakia.

Within the framework of the 30-month project, with a total budget of EUR 1 million, the project partners will implement a wide range of nature conservation interventions. The planned pilot projects will support the conservation of endangered native plant and animal species, the revitalization of natural habitats, the control of invasive species, and environmental education. Through these pilot actions, the participating biosphere reserves will be better able to fulfil UNESCO's principles for biosphere reserves as learning sites for sustainable development: places for testing interdisciplinary approaches to understanding and managing changes and interactions between social and ecological systems, including biodiversity conservation, conflict prevention, and conflict management. These sites provide local solutions to global challenges by involving local communities and all relevant stakeholders in planning and management processes.

Through community-based programmes, the visibility of the biosphere reserves will increase, environmental awareness among the local population will improve, and volunteerism will be strengthened.

Thanks to cross-border cooperation and the active involvement of local stakeholders, the biosphere reserves will renew their strategies, integrating community-driven actions and nature-based solutions. This process will contribute to long-term cross-border collaboration and the sustainable management of biosphere reserves. The development of these strategies is based on an in-depth situation analysis, including the identification of national and international good practices and the exchange of experience and knowledge among project partners and local communities, such as local authorities, civil organisations, educational institutions, businesses, and residents of the biosphere reserve areas.

1.2. Methodology of the strategy

The strategies of the two Hungarian biosphere reserves were developed in the frame of the current project using a unified methodology. In the case of the Pol'ana Biosphere Reserve, however, the preparation of the present document followed a somewhat different approach. This is because Pol'ana BR already has a recently adopted strategy, which was developed based on a comprehensive situation analysis and with the involvement of a wide range of stakeholders. Therefore, in the case of Pol'ana BR, the objective and task were not to develop a new strategy, but to renew and update the existing one.

The objectives of renewing the Pol'ana BR's strategy are multifaceted. First, the document aims to provide an English-language summary of the BR's main challenges and opportunities, as well as its development objectives and directions, in a form that is accessible to the Hungarian project partners, thereby supporting the establishment of long-term cross-border cooperation. Second, the additions made in line with the unified methodology – such as the inclusion of good practices – enrich the strategy, add value, and at the same time ensure a harmonised approach across the project. Third, and most importantly, in autumn 2025 UNESCO announced the MAB Hangzhou Strategic Action Plan 2026-2035, which defines the development objectives and action targets for biosphere reserves up to 2035. The present document therefore updates and fine-tunes the previously developed Pol'ana strategy in order to ensure better alignment with these goals and strategic directions.

2. Legislative and policy environment

2.1 Nature conservation legislation and agreements

2.1.1 Key international and EU legal frameworks

The **EU Birds Directive** (Directive 79/409/EEC; 1979) and the **Habitats Directive** (Council Directive 92/43/EEC; 1992) together form the cornerstone of European Union legislation on nature conservation and protection. The overarching objective of these two directives is to prevent the decline or disappearance of species and habitats and to ensure their long-term conservation, thereby mitigating the loss of biodiversity.

These two directives define the general legal framework for the protection and management of **Natura 2000** sites. The Natura 2000 network is the largest coordinated system of protected areas in the world, aiming to safeguard areas that host the most valuable and most threatened species and habitats.

In order to finance local actions aimed at nature conservation and restoration, the EU launched the **LIFE Programme** in 1992. The LIFE Programme is the EU's main funding instrument supporting projects related to environmental protection, nature restoration, and species conservation. In addition, through supporting the management of protected areas, it has played a key role in the establishment and functioning of the Natura 2000 network.

In 2019, the EU launched the **European Green Deal**, the EU's growth strategy. This comprehensive policy framework aims to initiate the green transition within the EU and to achieve climate neutrality by 2050. One of the most important components of the European Green Deal is the **EU Biodiversity Strategy for 2030**, which aims to protect and restore biodiversity and ecosystems. The strategy establishes a comprehensive framework of commitments and actions to address the main drivers of biodiversity loss—changes in land and sea use, overexploitation of biological resources, climate change, pollution, and invasive alien species.

Complementing the Birds and Habitats Directives, EU Member States adopted the **Nature Restoration Regulation** in 2024 (Regulation (EU) 2024/1991 on nature restoration), which sets legally binding targets for the restoration of degraded terrestrial and marine ecosystems. Under the regulation, Member States are required to restore a share of degraded habitats by 2030 and the majority of degraded habitats by 2050. This includes the restoration of forests, grasslands, wetlands, rivers, and lakes. The key provisions of the regulation include:

- Habitat restoration: Member States must restore at least 30% of the habitats covered by the regulation (including forests, grasslands, wetlands, rivers, and lakes) by 2030 and take further measures to achieve restoration targets by 2050.
- Restoration of agricultural areas: Measures must be introduced to increase landscape diversity in agricultural areas.
- Peatland restoration: Implementation of measures aimed at restoring drained peatlands.
- Tree planting: The EU must facilitate the planting of at least 3 billion additional trees by 2030.
- Environmental objectives: The regulation aims to protect biodiversity, mitigate climate change, enhance ecosystem services, and reduce the risk of natural disasters.

Under the regulation, Member States are required to develop national restoration plans within two years, covering the entire period up to 2050. These plans must define the restoration measures necessary to achieve the legally binding targets, the total area to be restored, and the implementation timeline. The measures must be designed in a manner harmonised with other relevant legislation, such as laws related to nature conservation, renewable energy, and agriculture.

The **Kunming-Montreal Global Biodiversity Framework (KMGBF)** and the **UN Sustainable Development Goals (SDGs)** are key international frameworks guiding global sustainability, biodiversity conservation and climate resilience efforts until 2030 and beyond. The KMGBF focuses specifically on halting biodiversity loss and restoring ecosystems, including the “30x30” target to effectively conserve at least 30% of land and water areas by 2030 through protected areas and other effective conservation measures (OECMs). The SDGs provide a broader framework covering environmental, social and economic sustainability, including biodiversity protection, climate action, clean water, sustainable communities, responsible production, education and partnerships. Biosphere reserves can contribute to both frameworks by combining

conservation, sustainable development, research, education and participatory governance.

2.1.2 International conventions

The most important international conventions and their relevance for cross-border biosphere reserves:

Ramsar Convention on wetlands	
The Ramsar Convention is an intergovernmental nature conservation agreement signed in 1971 to protect wetlands of international importance, particularly as habitats for waterfowl. The Convention aims to promote the conservation of wetlands and aquatic ecosystems and to establish the necessary legal and institutional frameworks to support this goal. Currently, the Convention has 157 contracting parties and numerous international partner organizations, such as WWF, IUCN, and BirdLife International. Under the Convention, each contracting party must designate at least one wetland of international importance that meets the established criteria and include it in the List of wetlands of international importance. The protection of wetlands must be integrated into land-use planning and regional development processes. Other key obligations include the establishment and maintenance of protected areas based on wetlands to improve the living conditions of waterfowl species, as well as the promotion of education, research, management, and monitoring activities related to wetlands.	
	Slovakia joined the Ramsar Convention in 1993. The Secretariat functions of the Ramsar Committee are carried out by the Ministry of Environment. Currently, 14 Slovak wetlands are listed in the List of wetlands of international importance, covering a total area of 40,697 hectares. These include: Caves of the Demanova Valley (1,448 ha), Domica (622 ha), Dunajské luhy (14,488 ha), Latorica (4,405 ha), Moravské luhy (5,380 ha), Orava River and its Tributaries (865 ha), Parížské mociare (184 ha), Poiplie (411 ha), Rudava River Valley (560 ha), Senné shponds (424 ha), Súr (1,137 ha) Tisa River (735 ha), Turiec wetlands (750 ha), Wetlands of Orava Basin (9,287 ha).¹
Bern Convention (Convention on the conservation of European wildlife and natural habitats)	
In 1979, the Bern Convention was adopted in Bern at the initiative of the Council of Europe. The Convention entered into force in 1982. The Council of Europe serves as the depository of the Convention and hosts its international Secretariat. In practice, the implementation of the Convention's objectives within the European Union is covered by the obligations set out in the Birds Directive and the Habitats Directive. Contracting parties are required to take "appropriate and necessary" measures to protect the habitats of fauna and flora, in particular to safeguard the strictly protected plants listed in Appendix I and the strictly protected animals listed in Appendix II. The Convention also addresses cooperation in research, information exchange, and other activities aimed at protecting European wildlife. It encourages the reintroduction of species on the verge of extinction in Europe, based on preliminary studies and the experiences of other countries. This Convention was the first to introduce provisions for the strict control of the introduction and release of non-(native) species.	
	Slovakia signed the Bern Convention on 28 April 1994 and ratified it on 23 September 1996; the Convention entered into force for Slovakia on 1 January 1997 (Notice of the Minister of Foreign Affairs No. 93/1998). The obligations under it have been incorporated into national nature conservation legislation, especially Act No. 543/2002 Coll. on Nature and Landscape Protection and its implementing regulations (e.g., Order No. 24/2003 Coll.). The Slovak Ministry of the

¹ <https://www.ramsar.org/country-profile/slovakia>

	Environment and the Slovak Environmental Agency manage the implementation of related international biodiversity agreements.
Bonn Convention (Convention on the conservation of migratory species of wild animals)	
The Bonn Convention, established in 1979, is a framework agreement aimed at the coordinated international protection of migratory species. The purpose of the Convention is to create an international legal framework for the conservation of migratory terrestrial and marine animal species throughout their entire migratory range. Appendix I of the Convention lists critically endangered migratory species that require strict protection (e.g., the lesser white-fronted goose, red-necked goose, ferruginous duck, and white-tailed eagle). Appendix II includes species that are in an unfavourable conservation status (e.g., bat species, raptors, and waterfowl). Several agreements have been established to protect these species, including the Agreement on the Conservation of Populations of European Bats (EUROBATS); the Agreement on the Conservation of African-Eurasian Migratory Waterbirds (AEWA); Memoranda of understanding for species such as the aquatic warbler (no longer breeding in our region), the great bustard, the slender-billed curlew (extinct), various raptors, and African-Eurasian migratory terrestrial birds.	
	Slovakia is a party to the Bonn Convention, which protects migratory species and their habitats across borders. As a signatory, Slovakia actively participates in regional agreements under this convention. Protection efforts focus on migratory animals, specifically focusing on the Carpathians and Pannonian lowland areas. Slovakia aligns its national legislation, such as the Act on nature and landscape protection (No. 543/2002 Coll.), with international conventions including Bonn, Berne, and CITES to manage species and habitats. Slovakia is one of 17 range states involved in the Memorandum of Understanding on the conservation and management of Middle-European populations of the great bustard (<i>Otus tarda</i>), which took effect in 2001 to save this species and manage agriculture in its habitat. The State Nature Conservancy of the Slovak Republic is responsible for the protection of migratory species.
Natura 2000 network	
The Natura 2000 network is a coherent system of the most valuable natural areas in the European Union, forming an ecologically unified network with consistent regulations. Its purpose is to contribute to the long-term conservation of Europe's wild animal and plant species, as well as natural habitats, and to preserve the natural environment essential for human well-being. The areas within the Natura 2000 network – including Special Protection Areas for birds and Special Areas of Conservation for habitats and species – are designated by the Member States.	
	The Natura 2000 network in Slovakia is based on Act No. 543/2002 Coll. on Nature and Landscape Protection, which has been amended to comply with EU directives. The country has designated 644 Sites of Community Importance and 41 Special Protection Areas for birds. Slovakia has one of the largest Natura 2000 networks (including national protected areas, 37.5 % of Slovakia's terrestrial territory is legally protected), however, biodiversity remains under pressure. The European Commission previously initiated infringement proceedings against Slovakia due to inadequate protection of forest areas and habitats of the capercaillie (<i>Tetrao urogallus</i>). In 2023, Slovakia adopted sweeping reforms to improve protected area governance, laying the legal foundation for accelerating zoning in national parks and improving management.
UNESCO World Heritage Convention (Convention concerning the protection of world cultural and natural heritage)	
The UNESCO World Heritage Programme was established in 1972 through the Convention concerning the protection of world cultural and natural heritage, aimed at safeguarding the world's cultural and natural heritage. To date, 193 countries have ratified the international treaty, committing to protect and preserve World Heritage sites located within their territories	

for future generations. The decision to inscribe a site on the World Heritage List is made by the World Heritage Committee, a 21-member decision-making and executive body elected every six years by the States Parties. Decisions are based on the site's compliance with the established selection criteria. A site may be nominated for World Heritage status in one of three categories: cultural, natural, or mixed.



The Slovak Republic formally notified its succession to the Convention Concerning the Protection of the World Cultural and Natural Heritage in 1990. Key legislation governing the protection of these sites includes Act No. 49/2002 on the protection of monuments and historic sites. The Slovak Commission for UNESCO acts as the advisory body to the government for the implementation of the Convention. Slovakia boasts eight UNESCO World Heritage sites (6 cultural, 2 natural) recognized for their exceptional historical and ecological value. Among the natural sites, the **Caves of Aggtelek Karst and Slovak Karst** (1995, 2000), a cross-border site with Hungary is also listed.²

UN Convention of biological diversity

The Convention on biological diversity was adopted at the United Nations Conference on Environment and Development in 1992, which addressed global environmental challenges, and entered into force in 1993. The Convention has three main objectives: the conservation of biological diversity, the sustainable use of its components, and the fair and equitable sharing of benefits arising from the utilization of genetic resources. The Convention defines the obligations of its Parties in relation to in-situ and ex-situ conservation, the sustainable use of biological diversity, as well as in areas such as research and training, public education and awareness, environmental impact assessment and mitigation, access to and transfer of technology, information exchange, and financing. Each Party is also required to develop a detailed national strategy and action plan for the conservation of biological diversity.



The Slovak Republic has become a contracting party of the Convention in 1994. The National Strategy for the Protection of Biodiversity in Slovakia, which was adopted by the Government and approved by the Parliament in 1997 (Resolution no. 231/1997) is the fundamental document for the implementation of the obligations of the Convention in Slovakia. The responsible body is the Convention on Biological Diversity in SK containing members from the Ministry of Environment, State Nature Conservancy and Institute of Botany (Slovak Academy of Sciences).³

European Ecological Network

At the 1995 Sofia Conference of European Environment Ministers, the intention to establish the Pan-European Ecological Network (PEEN) was approved. According to this plan, participating countries were required to designate the national components of the European-level ecological network by 2005. In 1999, in Geneva, guidelines for the development of the Pan-European Ecological Network were adopted. The aim of the European Ecological Network is to manage isolated protected areas and remaining non-protected natural or semi-natural habitats as a functional ecological system, connecting smaller and larger habitats to ensure the long-term survival of wildlife.



The National Ecological Network in Slovakia is a structured system designed to protect biodiversity through core areas and ecological corridors, including 35 core areas of European significance and 35 of national significance, established to counteract habitat fragmentation. It is officially supported by the Territorial System of Ecological Stability (TSES) and integrated with the EU Natura 2000 network, covering 30% of the country. It comprises core areas (biocentres), biocorridors, and interaction elements, with protection levels often corresponding to national parks and Natura 2000 sites, focusing on forests, wetlands, and alpine zones.

² <https://whc.unesco.org/en/statesparties/sk>

³ <https://www.cbd.int/countries?country=sk>

	- Supra-regional and regional biocentres: These represent the most significant, stable natural areas, such as national parks (such as national park Tatra or Poloniny), protected landscape areas, and smaller protected sites. - Biocorridors: Linear elements that connect biocentres, allowing for the migration of species and ecological processes. - Buffer zones: Surrounding protected areas, these act as protective zones to mitigate external pressures.
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2.1.3 National legal framework (brief overview)

Nature protection in Slovakia is primarily governed by the Constitution and Act No. 543/2002 on Nature and Landscape Protection (and its amendments).

- The Constitution grants a right to a favourable environment and imposes a duty on the state to protect natural resources and biodiversity, including forests and agricultural land.
- Act No. 543/2002 is the foundational law covering protected areas (national parks, nature reserves), species protection, and landscape management. It establishes a comprehensive framework for preserving biodiversity, protected areas, and species.

The Ministry of Environment is the central government authority in the area of nature protection. Regional and District Environmental Authorities exercise their powers within its boundary. The main expert body of nature protection is the State Nature Conservancy of the Slovak Republic established by the Ministry of Environment. It protects wildlife on the field and provides management and practical implementation of nature conservation. It is divided into National Parks Services, Protected Landscape Areas Services and Services of Caves.

Based on the detailed situation analysis of the BR, biosphere reserves (and their protection) are defined by Act No. 543/2002 on Nature and Landscape Protection. At the national level, biosphere reserves are directly addressed only in the Spatial Development Concept of Slovakia (No. 528/2002 Coll.) and in the Master Plan of the Supra-Regional Territorial System of Ecological Stability (No. 319/1992) and subsequently incorporated into the Spatial Development Concept of Slovakia (No. 528/2002 Coll.). Other strategic documents can also contribute to the objectives of BRs, though they do not directly mention BRs.

2.2 UNESCO MAB Programme

2.2.1 Historical overview

In 1970, UNESCO – the United Nations Educational, Scientific and Cultural Organization – launched the “Man and the Biosphere” (MAB) Programme to promote the protection of the natural environment. The programme was formally endorsed at the United Nations Conference on the Human Environment in **Stockholm** on 5 June **1972**. Under the programme, so-called **biosphere reserves were designated, with the primary aim of protecting areas of exceptional value representing the Earth’s major ecosystem types and observing the interaction of human and natural processes** within these areas. Unlike other nature protection statuses, **the main**

objective of a biosphere reserve is not simply the conservation of natural values, but the enhancement of the relationship between humans and nature.

Following the 1995 UN Conference on Environment and Development, the foundational document for the World Network of Biosphere Reserves – the **Seville Strategy** – was developed. The Strategy declared that, in addition to conserving landscapes, ecosystems, species, and their genetic diversity, biosphere reserves should serve as **model sites for sustainable development**, promoting at the local level economic development that ensures the sustainability of cultural, social, and ecological assets.

This human-centred and sustainability-focused approach was further developed in the **Madrid Action Plan (2008–2013)**, which summarized the main strategy of the UNESCO MAB Programme. The document provided detailed recommendations for participating countries on the **designation, management, and coordination of biosphere reserves**. During this period, numerous new MAB sites were designated, and cross-border biosphere reserve initiatives continued to be implemented.

The **UNESCO MAB Strategy for 2015–2025** identifies the main directions for the programme's development. The Strategy aims to focus support over the decade on the **conservation of biodiversity, restoration and enhancement of ecosystem services, and the sustainable use of natural resources**, with the objectives to:

- Contribute to the creation of sustainable, healthy, and equitable societies and economies, and human settlements in harmony with the biosphere;
- Promote scientific research, education, and capacity building related to biodiversity and sustainability;
- Support climate change mitigation and adaptation.

A key goal is that the World Network of Biosphere Reserves should consist of effective models of sustainable development, achieved through improved governance, cooperation, and networking; development of long-term partnerships; and implementation of a robust periodic review process.

The **Lima Action Plan**, which supports the Strategy's implementation, **places strong emphasis on thriving societies in harmony with the biosphere**, promoting the achievement of the Sustainable Development Goals (SDGs) and implementation of the 2030 Agenda for Sustainable Development, both within and beyond biosphere reserves, through the global dissemination of sustainability models developed in these reserves.

The latest milestone for the MAB Programme is the **Hangzhou Action Plan for the UNESCO MAB Programme and its World Network of Biosphere Reserves (2026–2035) announced in Autumn 2025**. This new strategy addresses current and future challenges, placing biosphere reserves at the centre of a renewed vision for **global sustainability aligned with the Sustainable Development Goals**. The strategy aims not only to **protect biodiversity and enhance ecosystem resilience**, but also to **promote fair, equitable, and sustainable societies**.

Objectives and action goals:

- **Objective A:** Contribute to the achievement of Multilateral Environmental Agreements and the Agenda for Sustainable Development by 2030 and beyond.
Action targets:
 - Promote biosphere reserves as models for human-nature relations
 - Support the 2030 Agenda for Sustainable Development
 - Integrate biosphere reserve contributions to the Kunming-Montreal Global Biodiversity Framework
 - Conserve natural habitats
 - Promote restoration projects
 - Ensure that biosphere reserves contribute to KMGBF Target 3
 - Manage actions to address invasive alien species (IAS)
 - Reduce pollution
 - Use productive land and seascapes more sustainably
 - Implement climate-positive action initiatives
 - Reform incentive structures
 - Transform consumption habits
 - Promote inclusive governance
- **Objective B:** Further develop the MAB Programme and its WNBR, including both human and financial resources, and strengthen the excellence of the Network.
Action targets:
 - Improve the representativeness of the WNBR by establishing new biosphere reserves, especially transboundary sites
 - Biosphere reserves for Indigenous People and Local Communities
 - Promote coherent data collection, advanced monitoring and assessment
 - Strengthen thematic and regional networks of the MAB Programme
 - Promote and support coastal and marine biosphere reserves
 - Encourage the effective operation and representativeness of MAB National Committees or equivalent
 - Develop the MAB Youth Network
 - Promote gender equality in MAB Programme
 - Mobilize the UNESCO family and UN partners and promoting good practices through UNESCO designated sites
 - Ensure that institutional support for sufficient financial and human resources are in place for biosphere reserves
 - Promote capacity development through collaboration among biosphere reserves in the WNBR
 - Foster solidarity within the WNBR
 - Enhance communication within the WNBR
- **Objective C:** Develop research and share knowledge and lessons learned from the WNBR to facilitate Living in Harmony with Nature, aligning with the SDGs, and inspire and influence sustainable futures and post-2030 agreements.
Action targets:
 - Enhance the participation of national scientific institutions and scientific collaborations in the implementation of the MAB Programme
 - Facilitate research and monitoring to promote 'Living in Harmony with Nature

- Remove obstacles to intra- and intergenerational peace, equity, gender equality and justice within the WNBR
- Advance open science and citizen science, promote the use of innovative and effective tools. and facilitate stakeholder involvement
- Promote the use of biosphere reserves as learning sites for sustainable futures
- Foster research partnerships within the UNESCO family and within and among UNESCO designated sites
- Combine Indigenous and Local knowledge with science and technology for sustainability
- Synergise education, science and culture for sustainability

2.2.2 Characteristics of Biosphere Reserves

The purpose of establishing **biosphere reserves** is to promote and demonstrate a **balanced relationship between humans and the biosphere**. Beyond conserving biological diversity and natural values, the main function of biosphere reserves is to support **sustainable economic development** by ensuring harmony between humans and nature. BRs aim to develop, implement, and showcase **management practices that ensure the long-term sustainable use of natural values and resources**. Achieving these goals relies heavily on preserving and supporting **traditional land-use practices and cultural values** characteristic of local social conditions.

Key functions of biosphere reserves

- **Conservation function:** BRs form part of national protected areas (e.g., national parks, nature reserves) and, in many cases, overlap with Natura 2000 sites or other internationally designated areas (e.g., Ramsar sites, World Heritage sites). They must maintain the diversity of selected ecosystems and landscapes, as well as the richness and genetic variability of species.
- **Development function:** Within BRs, ecologically, socially, and culturally sustainable economic development should be promoted, taking into account local traditional practices and heritage.
- **Research and education function:** BRs support scientific research and monitoring for nature conservation and promote educational and public awareness activities.

Zonation system

To implement these three functions, BRs are organized into zones:

- **Core area:** The primary purpose is conservation and research. Human activity, including entry, is only allowed in exceptional cases (e.g., research or habitat management). Core areas provide long-term protection for ecosystems, plant species, and animal species.
- **Buffer zone:** Surrounding the core area, the buffer zone's main role is to protect the core area. Limited and regulated human activities compatible with conservation goals may occur, such as scientific experiments, habitat restoration, environmental education, and ecotourism.

- **Transition area:** Transition zones demonstrate sustainable use of natural resources and may include agriculture and other human activities carried out in cooperation with local communities, conservation organizations, researchers, NGOs, and private individuals. Typically, these areas are not legally protected, and MAB status does not impose legal restrictions. Activities should actively involve local communities.

Designation and criteria

BRs are designated by the **International Coordinating Council of the MAB Programme** upon application by the concerned state. They form a **worldwide network** in which states participate voluntarily. To qualify, sites must meet the following criteria:

- Represent a mosaic of ecological systems, including human-influenced areas.
- Play an important role in biodiversity conservation.
- Provide opportunities to explore and demonstrate regional approaches to sustainable development.
- Be of sufficient size to support the three primary functions (conservation, development, research and education).
- Ensure the three functions are supported through appropriate zonation (core, buffer, transition).
- Establish organizational structures to ensure participation of government authorities, local communities, and private stakeholders in BR management.
- Ensure mechanisms for:
 - o Managing human activities in buffer zones;
 - o Policies or management plans required for BR operation;
 - o Designated authorities or mechanisms for plan implementation;
 - o Research, monitoring, educational, and training programmes.

BRs maintain their internationally recognized MAB status only if they continue to comply with the UNESCO MAB Framework guidelines. Areas are reviewed every 10 years, and the results are submitted in a national report to the UNESCO MAB Secretariat, which determines whether the site still meets the criteria.

The World Network of Biosphere Reserves now includes 784 sites in 142 countries.

2.2.3 Biosphere reserves in Slovakia

Slovakia actively participates in the UNESCO Man and the Biosphere (MAB) Programme with four established biosphere reserves representing unique Carpathian ecosystems. These sites promote sustainable development, biodiversity conservation, and cross-border cooperation, connecting the nation to global environmental networks.

Slovak biosphere reserves:

- Poľana Biosphere Reserve (1990): Located in central Slovakia, it covers the territory of a deeply eroded stratovolcano, rich in deciduous and spruce forests, featuring significant local community involvement.

- Tatra Biosphere Reserve (1992): A cross-border site with Poland (Tatra National Park), protecting the highest part of the Carpathian Mountains, featuring alpine ecosystems.
- East Carpathian Biosphere Reserve (1998): A trilateral biosphere reserve shared with Poland and Ukraine, representing a significant biodiversity corridor in the Eastern Carpathians.
- Slovenský Kras Biosphere Reserve (1977): Located in southern Slovakia, it is renowned for its extensive karst phenomena and biodiversity.

Slovak UNESCO Commission is integrated in the Ministry of the Foreign and European Affairs of the Slovak Republic and chaired by the Minister. Slovak Committee for the UNESCO MAB Programme is an advisory body to the Slovak UNESCO Commission. There are representatives of the Ministry of the Environment, State Nature Conservancy, scientific and academic sector in the Committee. Biosphere Reserve managers and representatives of the BR coordination boards are represented *ex-offo* in the Committee. The administrative and representation activities of the Committee are funded by the Ministry of the Foreign and European Affairs of the Slovak Republic and by the Ministry of the Environment of the Slovak Republic.⁴

3. Challenges and strengths – Overview of the current situation and performance of the Poľana Biosphere Reserve

The detailed situation analysis of the status and performance of Poľana Biosphere Reserve (Poľana BR, BR) prepared in 2025 assessed the legislative and strategic framework governing the operation of the BR, its management system and partnership relations, as well as the natural and geographical characteristics and the socio-economic and socio-demographic potential of the area. This chapter summarizes the main findings of the situation analysis to place the strategic section in context, by assessing the current situation and performance of the BR.

3.1 The Poľana Biosphere Reserve – in a nutshell

The Poľana Biosphere Reserve (BR), located in central Slovakia, was established in 1990 as the second biosphere reserve in the Slovak Republic. This area encompasses the highest volcanic mountain range in Slovakia, with a unique geological and geomorphological character resulting from volcanic activity 13–15 million years ago: the Poľana Mountains have been protected since 1981 as part of the Poľana Protected Landscape Area.

BR Poľana covers an area of 24,158.23 hectares and represents a mountainous landscape with varied topography, reflecting a complex geological history of volcanic activity, faults, and erosion. The entire area forms part of the Carpathian Arc. Due to its southern exposure and an altitudinal range of almost 1,000 m, a wide variety of thermophilous, montane, and alpine plant and animal species occur within a relatively small area. The area's unique geological and geomorphological character is the result of volcanic activity that took place approximately 13–15 million years ago. Forests

⁴ <https://worldprotectedareas.sopsr.sk/en/unescos-mab-programme/slovak-mab-committee/>

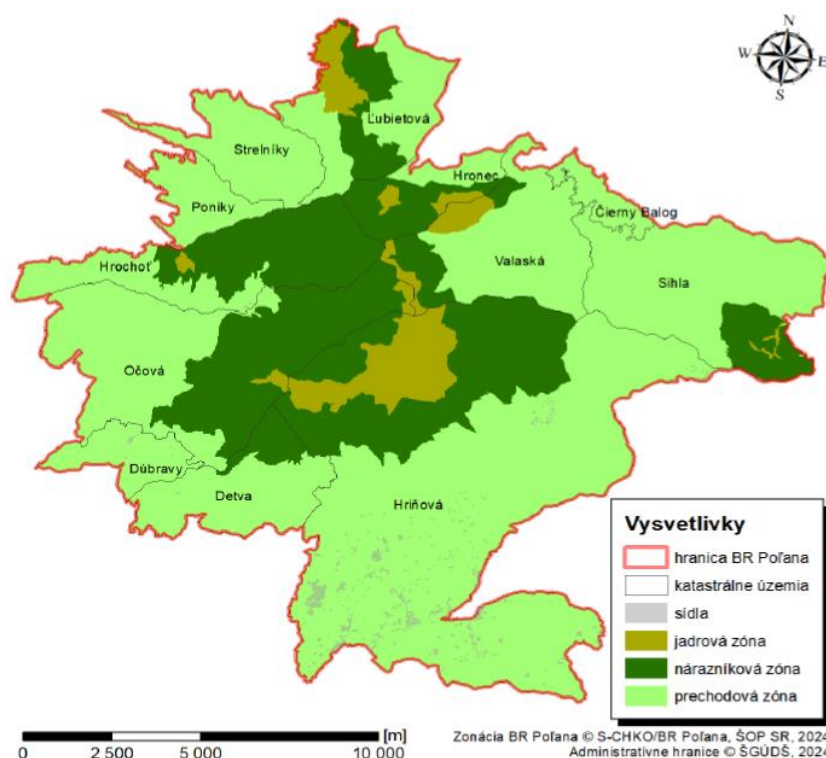
cover about 85% of the territory. Extensive beech forests, fir–beech forests, and slope forest communities are typical of Poľana, and in some locations they retain a primeval forest character. Areas that were deforested in the past are today represented by meadows and pastures, including peatlands and groundwater-rich meadows. Montane and subalpine grass species are characteristic of these habitats. Rock communities further increase the overall biodiversity of the area. Thanks to the high diversity of habitats, non-chordate fauna is also exceptionally rich. Many species are endemic, rare, or threatened. Since 2016, Hriňovské lazy has formed part of the transition zone. This landscape is a mosaic of narrow land strips, interwoven with meadows and pastures on former arable land, field paths, and hedgerows, sometimes overgrown with dog roses, blackthorn, and wild cherry.⁵

The BR covers the territory of 13 settlements across four districts: Detva, Dúbravy and Hriňová (Detva district), Očová (Zvolen district), Hrochoť, Ľubietová, Poniky and Povrazník (Banská Bystrica district), Čierny Balog, Hronec, Sihla, Strelníky and Valaská (Brezno district) with a population of approx. 36,5 thousand people.

The **core zone** of the BR includes the most important small-scale protected areas and covers more than 1,332.70 ha. This core zone consists of **six nature reserves** that represent the most valuable forest ecosystems of the Poľana Biosphere Reserve. Under **national legislation**, these areas are subject to a **strict non-intervention regime**, in which human activities are prohibited, except for **regulated hiking and scientific research**. This zone is protected from external influences by a **buffer zone** of over 6,418.53 ha. The buffer zone is primarily aimed at forestry and agriculture to preserve the unique fauna and flora. Activities such as grazing or other human interventions are allowed but remain subordinate to nature conservation objectives. The **transition zone**, covering over 16,407.00 ha, is the largest zone. In this area, economic activities should be conducted in accordance with the interests of nature and landscape protection.

The boundaries of the BR follow the natural limits of the mountain range. Administratively, the territory partially covers the districts of Banská Bystrica, Zvolen, Brezno, and Detva. It includes 13 cadastral areas — municipalities Detva, Dúbravy, Hriňová in the Detva district; municipality Očová in the Zvolen district; municipalities Hrochoť, Ľubietová, Poniky, Povrazník in the Banská Bystrica district; and Čierny Balog, Hronec, Sihla, Strelníky, Valaská in the Brezno district (Urban, 2016).

⁵ <https://worldprotectedareas.sopsr.sk/en/unescos-mab-programme/biosphere-reserves/polana/>



Source: CHKO/BR Poľana, ŠOP SR, 2024; ŠGÚDŠ, 2024

The BR area is characterized by a relatively low population density (1.96 inhabitants/km²), unfavourable demographic trends – such as population decline and ageing – and is among the least urbanized regions in Slovakia. These demographic trends can be largely attributed to the area's weak economic performance: settlements face challenges including limited employment opportunities, low levels of business activity, and a weak entrepreneurial environment. The main economic activities in the region are agriculture and forestry; however, tourism – building on the area's rich cultural and folkloric traditions as well as its outstanding natural values – has recently been growing in importance.

The **management tasks of BR Poľana are carried out by the Poľana Protected Landscape Area Administration**, which is an organizational unit of the State Nature Conservancy of the Slovak Republic (ŠOP SR). To ensure effective nature protection, the ŠOP SR communicates with BR managers, which are under the jurisdiction of national parks, via the Department of International Cooperation. In the case of BR Poľana, additional staff positions have been established to carry out necessary tasks and provide support to the BR managers.

3.2 Challenges and threats

Based on the analysis, BR Poľana faces the following challenges, mainly preventing the spread of invasive plants, overgrowing of permanent grasslands. However, the challenge is also to ensure sustainable forestry, manage water resources, and ensure the effectiveness of BR Poľana's visibility.

3.2.1 Spread of invasive species

The spread of invasive plant species poses a serious threat to biodiversity, agricultural lands, protected soils, and residential areas.

The most common invasive species include common ragweed (*Ambrosia artemisiifolia*), Canadian goldenrod (*Solidago canadensis*), knotweeds (*Fallopia* spp.), Himalayan balsam (*Impatiens glandulifera*), and giant hogweed (*Heracleum mantegazzianum*). These species are mainly found along roads, in built-up areas, at settlement edges, near watercourses, and on forest margins. Other recorded invasive species include Japanese knotweed (*Fallopia japonica*), black locust (*Robinia pseudoacacia*), and many-leaved lupine (*Lupinus polyphyllus*).

These invasive plants reduce native vegetation, disrupt nutrient cycles, pose health risks (e.g., allergens, skin irritation), and often indicate ecosystem degradation. Abandoned agricultural lands, roads, and poorly maintained settlement areas represent a significant pathway for the spread of invasive species into protected natural areas.

Fortunately, so far, the occurrence of invasive plants has only occurred in the transition zone. The core and buffer zones are free of invasive plants. However, measures need to be taken to eliminate invasive species.

3.2.2 Sustainable forestry

Forest vegetation covers more than 80% of the BR Poľana area. Of this forested land, over 80% is managed by the Slovak State Forests (Lesy SR, a.s.) through two main forest enterprises: the Poľana Forest Enterprise and the Horehronie Forest Enterprise.

- Poľana Forest Enterprise: Covering 200,000 ha, with 72,094 ha of forested land under management – from Šiatorská Bukovinka on the Hungarian border to Donovaly – this area is characterized by a high concentration of protected areas and a valuable natural landscape. Annual forest regeneration is 205 ha, and the annual harvest in 2022 amounted to 255,000 m³.
- Horehronie Forest Enterprise: Managing the eastern part of BR Poľana under LS Krám and LS Hronec (114,000 ha), with 70,705 ha of forested land under management, this enterprise has a higher proportion of commercial forests and a smaller share of protected areas compared to Poľana. Annual forest regeneration is 437 ha, forest protection costs amounted to €403,000, and the annual harvest in 2022 was 389,000 m³.

Smaller forest units in the area are managed by private owners or municipal forests.

According to the 2021 Forest Area Development Report, forest cover has increased and biodiversity has been preserved, with the Poľana Forest Enterprise becoming the seventh most forested area in Slovakia. Contributing factors include the maintenance of traditional management practices – such as manual mowing of mountain meadows by foresters – and the promotion of ecosystem services through the construction and maintenance of springs, educational trails, and public outreach programs. **Forestry in the BR Poľana area can therefore be evaluated positively.**

3.2.3 Overpopulated wild animals

Hunting in Poľana has a long history and strong cultural tradition. The Poľana area is divided into several hunting districts, some of which extend into the territory of the Protected Landscape Area.

Hunting in Poľana continues to develop and contributes to improving the quality of game populations. These practices support biodiversity conservation in the Poľana BR, help shape the character of the landscape, and maintain habitats with high-quality and diverse flora. The core of Poľana has been designated as a protected hunting area due to its genetically high-quality population of red deer, as well as the diverse composition of furred and feathered game species. The area has become highly sought after, with demand far exceeding supply in the region.

However, overpopulation of predators presents an increasing challenge. According to the questionnaire survey, **one in four residents perceives overpopulated bears and wolves as the biggest problem for the area's development, citing reduced safety and heightened fear among both locals and tourists.**

3.2.4 Overgrowth of permanent grasslands

Farming in the Poľana region is primarily carried out by independent farmers engaged in both crop and livestock production. Permanent grasslands constitute the largest portion of agricultural land, shaping the region's characteristic scattered settlement pattern and the landscape of small agricultural plots. The area is also known for a variety of local handicrafts and food products, including dairy, pork, beef, and honey. However, **due to weak support for traditional meadow and pasture management, weak support for livestock breeding.**

Historically, crop production in the region was dominated by cereals, potatoes, and fruit crops. **In recent years, for economic reasons, maize and oilseed rape have become more prevalent, leading to monocultures and a loss of original floral biodiversity. Livestock production,** historically characterized by flocks of sheep and herds of cattle, still dominates the area but numbers **have been declining annually.** This decline contributes to the loss of the traditional landscape character, the disappearance of habitats dependent on domestic animals, and reductions in populations of plant and animal species associated with traditionally managed farmland.

Between 2004 and 2024, **agricultural abandonment affected 1,430.37 ha (32%)** of farmland. Only a portion of this land — 377.33 ha — was transformed into forest under a forest care program, while the remainder **remains agriculturally unmanaged, undergoing succession by shrubs and trees.** The abandonment of farmland has also contributed to a decrease in livestock numbers, particularly sheep from 2010 to 2023, with an overall decline of 25%. Invasive species are often indicative of land abandonment and reduce the visual quality of preserved historical agricultural landscapes.

Permanent grasslands are increasingly threatened by succession, leading to habitat degradation, reduced species diversity, encroachment by woody plants, and increased dominance of competitive grasses. Unsuitable land-use changes, agricultural abandonment, or the planting of non-native tree species accelerate succession, degrade grasslands, diminish traditional agricultural landscapes, and create both visual and ecological impacts.

3.2.5 Sensitive water system

Although watercourses and standing waters are relatively limited in the Poľana Biosphere Reserve, the area has a highly sensitive water system. Water levels typically peak in spring due to snowmelt and rainfall, while summer and early autumn are characterized by declining water levels, increasing seasonal water stress.

3.2.6 Social and economic challenges

The BR area is characterized by unfavourable demographic trends, including population decline and aging, driven both by negative natural population growth and migration. The outflow of young people from the area represents an increasing pressure.

These demographic trends can largely be attributed to the region's weak economic performance: settlements face challenges such as limited employment opportunities (particularly in western Slovakia), low levels of business activity, and a weak entrepreneurial environment. Forestry and agriculture remain the main employers in the region. Recently, there has been growing interest in developing tourism, which could help address the weak and limited job market while enhancing residents' skills in service provision, thereby improving overall local competencies.

A positive aspect of the relatively weak economic sector is that economic activities do not cause significant environmental problems across the entire BR area; rather, they are mostly limited to local challenges.

3.2.7 Enhancement visibility of the BR and its functions

The visibility of the BR and its functions and tasks presents a mixed picture. While – based on the questionnaire survey conducted among residents in 2025 – **general awareness of the BR is quite high among local residents, there is still uncertainty regarding its mission, functions, and responsibilities.**

Based on the responses of 101 survey participants, **almost all respondents are aware that they live in the Poľana Biosphere Reserve.** Although most respondents (78%) know that the Poľana BR is part of the UNESCO-designated sites, **only every second respondent has heard of the UNESCO MAB Programme.**

Overall, **77% of respondents perceived living in the BR area as a benefit or positive aspect**, while about one-quarter did not perceive any impact on their daily lives. However, **only 14% of respondents expressed interest in becoming members of the Coordination Council of BR Poľana.**

¾ of respondents viewed the existence of the Poľana Protected Landscape Area as an opportunity for development, particularly highlighting sustainable tourism.

Overall, improving the visibility of the BR should be an important priority in the future, both among residents and tourists. Beyond general awareness, communication efforts should focus on presenting a balanced understanding of its three core functions and conveying its mission of fostering a harmonious coexistence between humans and nature to the target groups. It is also important to raise awareness of the BR's organizational background and governance structure, as this could potentially strengthen people's willingness to participate and cooperate in related initiatives.

3.3 Strengths and good practices

3.3.1 Natural values - rich biodiversity and unique landforms

BR Poľana covers an area of 24,158.23 hectares and represents a mountainous landscape with varied topography, reflecting a complex geological history of volcanic activity, faults, and erosion. The entire area forms part of the Carpathian Arc. **One of the reserve's most important strengths is its rich biodiversity and unique landforms, which support a wide variety of thermophilus, montane, and alpine plant and animal species within a relatively compact area.**

The unique geological and geomorphological character of Poľana is the result of volcanic activity, which has shaped distinctive surface features, many of which are designated as specially protected natural areas. Key natural monuments include Veporské skalky, Melichova skala, Kalamárka, Jánošíkova skala, and the 23-meter-high Bystrý Brook Waterfall.

Forests cover approximately 85% of the territory. Typical forest types include extensive beech forests, fir–beech forests, and slope forest communities, some of which retain primeval characteristics. Mosaic landscapes of fields and permanent crops — such as orchards, vineyards, hop fields, shrub plantations, fast-growing woody stands, fallow fields, and ruderal vegetation — are mainly concentrated in the southern part of the reserve. **These mosaics are important for landscape diversity and overall vegetation and fauna biodiversity.**

Although watercourses and standing waters are rare, they provide extremely important habitats. Wetlands and springs — including flooded grasslands, sedge and reed communities, peatlands, and fens — are sensitive ecosystems hosting numerous rare or endangered plant species. Formerly deforested areas are now represented by meadows and pastures, including peatlands and groundwater-rich habitats. Montane and subalpine grass species characterize these areas, while rock communities further enhance biodiversity. Permanent grassland and herbaceous communities, both intensively and extensively used, contribute significantly to overall biodiversity, supporting numerous important species, including rare and endangered ones.

The high habitat diversity supports exceptionally rich invertebrate fauna, many of which are endemic, relict, rare, or threatened, with several species protected at national and

European levels. Invertebrates are dominated by insects, including more than 50% of Slovakia's known Diptera species and 30% of legally protected Coleoptera. Mountain and submontane watercourses provide habitats for fish species such as brown trout (*Salmo trutta morpha fario*), European bullhead (*Cottus gobio*), asp (*Aspius aspius*), grayling (*Thymallus thymallus*), and noble crayfish (*Astacus astacus*). Amphibians and reptiles are represented by 11 and 9 species, respectively, including European-protected species such as the yellow-bellied toad (*Bombina variegata*), Carpathian newt (*Lissotriton montandoni*), and European tree frog (*Hyla arborea*). Avian diversity in Poľana is exceptionally high, providing habitats for many rare and endangered species of national and European significance, including 16 species of pan-European conservation concern. Mammalian fauna includes 67 recorded species (four regionally extinct), with notable species such as bats (representing 71% of Slovakia's bat fauna), European otter (*Lutra lutra*), and all of Slovakia's large carnivores — brown bear (*Ursus arctos*), Eurasian lynx (*Lynx lynx*), gray wolf (*Canis lupus*), and wildcat (*Felis silvestris*). In recent years, the golden jackal (*Canis aureus*) has rapidly expanded into southern Podpoľanie. Among game species, red deer are the most widespread.

The rich biodiversity of BR Poľana is shaped by several factors, including the nearly 1,000-meter elevation range, georelief, complex geological structure, landscape patterns, and land use. Although Poľana is part of the Alpine biogeographical region, it is notable for the overlap of Pannonian and Carpathian species, resulting in the coexistence of both thermophilic and montane species.

Human activity – including historical and current land use and hunting – has also significantly influenced the composition of animal communities and the overall landscape character, demonstrating the long-term interaction between people and nature in the region.

3.3.2 Efficient BR management

The territory of the Poľana Biosphere Reserve (BR) is managed by the Administration of the Poľana Protected Landscape Area (Správa CHKO Poľana), an organizational unit of the State Nature Conservancy of the Slovak Republic (ŠOP SR). To ensure the implementation of nature conservation measures in individual biosphere reserves, ŠOP SR cooperates with BR administrations through its Department of International Cooperation.

Over the past 15 years, the management of BR Poľana has undergone significant development.

In the initial phase, weak communication, limited knowledge of the BR's mission, negative stakeholder attitudes, and low environmental awareness contributed to generally unfavourable perceptions of the BR. The Administration of the Poľana Protected Landscape Area – BR Poľana primarily operated as a unit of the State Nature Conservancy, focusing mainly on fulfilling the conservation function. **Nature protection was prioritized, while the human dimension remained in the background. As a result, relationships with regional stakeholders were characterized by mistrust and misunderstandings.** Ineffective communication led to very low awareness and understanding of the biosphere reserve concept. Many

stakeholders developed negative attitudes toward the PLA Administration – BR Poľana, largely due to perceived nature protection restrictions. **Conservation was often viewed as an obstacle to regional development.**

A turning point came in 2010 following a change in leadership at the Administration of the Poľana Protected Landscape Area and BR Poľana. **In line with recommendations issued by the International Coordinating Council of the UNESCO MAB Programme during the 2012 periodic review, the administration initiated structured cooperation and improved communication with regional stakeholders.** Human activities and development opportunities began to receive greater emphasis, and efforts were made to seek common solutions and prepare joint plans for the balanced implementation of all three biosphere reserve functions: conservation, logistic (education and research), and development.

Inspired by lessons learned during a study visit to the Entlebuch Biosphere Reserve in Switzerland — considered a model of good practice in territorial management — the Coordination Council of Poľana BR (KR BR Poľana) was established in 2014. The Council brought together regional representatives to strengthen local engagement and stakeholder commitment to cooperation within the BR.

To address thematic issues more effectively, **several working groups were created under the Coordination Council**, focusing on large carnivore management, tourism development, fundraising, local self-governments, agriculture and forestry.

Key strategic documents were prepared in close cooperation with stakeholders, including the Action Plan, the Regional Identity Strategy and the Added Value Strategy of BR Poľana. The Action Plan included measures such as:

- Continuous monitoring of species and habitats from a biodiversity perspective
- Preparation of a local “red list” of species
- Establishment of an advisory system to help land users and individuals access incentives
- Identification and quantification of ecosystem services
- Development of a biodiversity climate adaptation program

The work of the initially informal Coordination Council led to the drafting of new statutes to establish it as a legal entity. In 2022, the Ministry of the Interior of the Slovak Republic officially recognized KR BR Poľana as a civic association. Its members include landowners, land users, entrepreneurs, residents, mayors, and representatives of cultural, scientific, and non-governmental organizations active in BR Poľana. The Coordination Council is headed by a Chair, who serves as the statutory representative. The Presidium, composed of nine members, acts as the executive body accountable to the General Assembly, which convenes twice a year. An independent auditor oversees compliance with statutes and internal regulations.

Today, the civic association Coordination Council of the Poľana Biosphere Reserve ensures participatory management of the biosphere reserve and implementation of the UNESCO MAB Programme. It cooperates closely with the

Administration of the Poľana Protected Landscape Area (responsible for the conservation function), and the Slovak Committee of the UNESCO MAB Programme.

The conservation function continues to be fully implemented within the mandate of the State Nature Conservancy of the Slovak Republic. **KR BR Poľana seeks to strengthen the development function, which had long been underrepresented.** The association aims to improve the quality of life of residents through partnership-based projects and provides a platform for open dialogue among experts in spatial planning, agriculture, forestry, hunting, and large carnivore management. **The educational functions are implemented mainly through school-based education and awareness-raising activities.** Another strategic objective is to bridge science and practice. In line with UNESCO Technical Guidelines for Biosphere Reserves, **BR Poľana aims to establish a Scientific Council to coordinate research activities and ensure the accessibility and practical application of research results.**

In 2022, a Communication Strategy for BR Poľana was developed in accordance with UNESCO's Communication Strategy (2017) and the Technical Guidelines for Biosphere Reserves (2021).

The effectiveness of BR Poľana's management was internationally recognized in 2017, when its director, Ing. Vladimíra Fabriciusová, PhD., received an award presented by Michaël Batisse for the best biosphere reserve management worldwide.

3.3.3 Youth engagement and environmental education

BR Poľana places special emphasis on youth involvement through a wide range of educational and engagement activities.

In 2012, an **Eco centre was established** at the Administration of PLA–BR Poľana to serve as a hub for environmental awareness and education. Since then, the Administration has offered a variety of structured environmental education programs.

PLA-BR Poľana has long cooperated with primary schools within the BR. **Environmental education in kindergartens, primary schools, and secondary schools plays an important role in preparing young people for living sustainably in the region.** A broad spectrum of topics — including agriculture, forestry, large carnivores, amphibians, and even astronomy — helps children understand the value and significance of the Poľana BR.

Several informal education programs and initiatives are organized within and under the auspices of BR Poľana, including: *Youth in the Mountains, Poľana in Bubbles, Old Giants, The Photographer's Ten Commandments, Brown Bear, What's in Our Cones?, Effective Ecosystem Protection, Jewels of Castle Meadows, Forestry Days, Welcoming the Spring Bird Messengers, and Become a Star.*

BR Poľana also actively engages young residents through **the initiative BR Young Blood, which provides a platform for youth to present their ideas, opinions, and concerns** related to regional development and conservation.

In 2019, the Administration of PLA–BR Poľana cooperated with the association K.O.Z.A. Zvolen on the project *Young Voices from Podpoľanie*. The project aimed to increase environmental awareness and strengthen the soft skills of young people in the Poľana BR, particularly in relation to spending their free time in protected areas and exploring the region's natural and cultural heritage.

Outdoor educational activities are organized throughout the year to help young people discover Poľana BR and learn about its nature and history in every season. Employees of the State Nature Conservancy of the Slovak Republic, together with local stakeholders, organize excursions and interactive outdoor programs in small-scale protected areas, often incorporating ecological games.

Competitions also support youth engagement – for example, the selection of the “Queen of Poľana” (a woman from the region who personifies the rich values of the biosphere reserve), as well as art competitions such as *Around the World with Poľana*.

Workshops aimed at developing soft skills among young volunteers represent another good practice in BR Poľana. Young people are a strong driving force and represent significant potential for the future development of the Podpoľanie region.

3.3.4 Existing local product brand

The Poľana region is well known for its rich tradition of local handicrafts and high-quality food products, including dairy products, pork and beef, honey, and bakery goods. **Many local producers operate under the regional brand “Regional Product Podpoľanie”**, which guarantees authenticity, local origin, and quality. Several restaurants in Detva and Kriváň have also been awarded this label.

The certificate is awarded by the Local Action Group (MAS Podpoľanie) and applies to products that meet criteria related to local origin, traditional or handmade character, environmentally friendly production processes, and uniqueness reflecting the specific features of the region.

The main objective of introducing the regional product labelling system in Podpoľanie is to promote high-quality local products and services, support the region's economic, cultural, and environmental development, and strengthen Podpoľanie's identity as a distinctive and recognizable region.

Currently, certified products and services include local food products (such as smoked meats, fresh meat, honey, bakery products, and vegetables, in total 7), handicrafts (24), traditional dishes (3), and accommodation and catering services (4).⁶

3.3.5 Promising tourism potential

BR Poľana has strong tourism potential; however, its full utilization remains untapped. The region's tourism appeal is based on both its natural environment and rich cultural heritage.

⁶ <https://regionalnyproduktpodpolanie.sk/>

Due to its unique folklore and ethnography, Poľana ranks among the most significant cultural regions in Slovakia. Traditional wooden houses, haylofts, potato cellars, painted wooden crosses, and preserved folk art traditions contribute to the region's distinctive character. Local traditional costumes, folklore groups, and intangible heritage elements such as dances and songs are showcased during events like the International Festival of Folklore and Traditional Folk Culture, further highlighting the area's cultural richness.

The history and culture of the region are also represented in its museums, including the Craft Courtyard in Očová, the Arteska House of Arts in Detva, and the wooden house of Ján Nosál' in Hriňová. The historical significance of sheep farming and bryndza cheese production is presented at the Podpoľanie Museum. The dispersed rural landscape, with isolated farms and small hamlets, provides additional opportunities for rural tourism.

In the buffer zone and transition zone, monuments of the Slovak National Uprising, military heritage sites such as bunkers and trenches are present.

The biosphere reserve and its surroundings are complemented by an extensive network of educational trails, many of which are also suitable for cycling. Popular rock climbing sites, such as Kalamárka, attract adventure tourists. Educational programs on forestry history and culture are offered at the Vydrovo Forestry Open-Air Museum. Viglas Castle is another notable cultural attraction.

Tourism infrastructure, however, requires improvement. The number of formal accommodation facilities in the BR is relatively low, though many private owners rent apartments and cottages. Dining options are also limited and should be expanded. Visitors can access information centres both within the BR (in Hriňová) and in district towns such as Zvolen, Detva, Banská Bystrica, and Brezno. Accessibility by car, bus, or train to the towns is relatively good; however, connections to villages and key tourist starting points are limited and need improvement.

Promotion of the area is primarily carried out by the staff of the CHKO Poľana Administration through public events and educational activities for children and youth. Nevertheless, there is currently no dedicated online portal promoting Poľana as a "tourist destination," and awareness of its designation as a biosphere reserve remains relatively low among tourists.

4. Strategy of the Poľana Biosphere Reserve

4.1 Vision and mission of the BR

The vision and mission of the Poľana Biosphere Reserve strategy stem from a strategic planning process based on the needs and challenges identified by stakeholders within the biosphere reserve.

The strategy identifies the longer-term **vision** of the Poľana BR for the 2026-2035 period: *Building a region where people are aware of both their own value and the value of the territory, defined by their cultural and historical uniqueness, while also*

recognizing their shared future and their interactions with this territory, and acting collectively and responsibly to create a prosperous community living in harmony within the biosphere.

The **mission** of the BR is to **strengthen the relationship between people and nature by supporting the main forms of land use, fostering networking, open communication, participation, the introduction of innovation, and the involvement of young people in the management of the biosphere reserve**. It contributes to inclusive approaches to nature conservation and sustainable development by integrating biodiversity and ecosystem services into spatial planning and governance.

Governing the area is based on the following core principles:

- Transparency
- Participation
- Fair communication
- Support for effective solutions and activities
- Support for education
- Support for regional producers

4.2 Objectives, action goals and measures of the BR

BR's long-term development is centred around the following three objectives translated into action goals and measures:

OBJECTIVE 1 focuses on **enhancing optimal land use and landscape management** while strengthening the relationship between people and nature, preserving ecological integrity, and maintaining the quality of life of residents in the Poľana Biosphere Reserve.

Planned action goals and measures:

- Support for traditional agriculture with an emphasis on livestock farming
 - o Taking protected areas into account as priority zones for supporting livestock farming in the new Slovak agricultural policy, while preserving healthy food production, ensuring biodiversity conservation, and maintaining landscape-forming functions.
- Support for the ecological use of forests
 - o Ensure sufficient financial support for the ecological management of forests
- Optimal management of water resources
 - o Ensure the flow capacity of water resources
- Habitat protection
 - o Regular monitoring of forest and non-forest habitats, as well as plant and animal species in the Poľana BR
- Support nature restoration projects
 - o Ensure market access and promotion of regional products
- Management measures to address invasive non-native species

- Support the hunting of predators of the Western capercaillie where permitted by legislation
- Continue research on climate change adaptation, particularly in strictly protected areas
 - Management of research activities in the Poľana BR
- Support regional producers
 - Ensure market access and promotion of regional products
- Promote a synthetic and holistic approach to landscape planning
 - Implement legislative changes in landscape planning, develop a methodology for comprehensive landscape assessment, and ensure the binding nature of the outputs

OBJECTIVE 2 focuses on **strengthening and developing international cooperation**, including capacity building, increased financial support, and greater support for local communities.

Planned action goals and measures:

- Maintain and support new job opportunities in the fields of agriculture, forestry, and tourism
 - Development of projects aimed at strengthening capacities in sectors responsible for landscape stewardship and its sustainable use
 - Involvement of young people in the management of the biosphere reserve through youth needs assessments, participatory planning and focus groups
 - Involvement of landowners and land users/managers, local governments and local communities in practical nature conservation activities (especially management of protected areas, species monitoring, and preparation of nature conservation documentation)
 - Networking of stakeholders through joint projects, events and the Coordination Council of the Poľana BR
- Establish appropriate destination management using the UNESCO – Poľana Biosphere Reserve brand to support the development of tourism and ecotourism
 - Ensure financial support for the development of soft/sustainable tourism based on strategic planning and the marketing strategy (see annex)
 - Cooperation with municipalities, the Regional Tourism Organisation, the Local Action Group, mountain huts and tourism facilities in interpreting the values of the Poľana BR
 - Support for establishing local product shops along frequently visited tourist routes
 - Integration of the Intergovernmental MAB Programme into the strategic documents of local governments and regional authorities
- Support international partnerships and projects within the World Network of Biosphere Reserves
 - Sharing and exchange of good practices in biosphere reserve management within the WNBR

- Cooperation with international institutions and development of ERASMUS+ projects
- Cooperation with governmental and non-governmental institutions in Slovakia and abroad through exchange of experience, study visits, international projects, and support for and participation in the activities of NGOs, foundations and other communities with similar objectives

OBJECTIVE 3 focuses on **promoting research and share knowledge** and lessons learned from the World Network of Biosphere Reserves to facilitate living in harmony with nature, align with the Sustainable Development Goals, and provide continuous, modern, professional, and experiential education for all age groups.

Planned action goals and measures:

- Promote the use of the Poľana Biosphere Reserve as an educational site for a sustainable future
 - Raising awareness of the BR through systematic environmental education and the development of programmes within the Poľana BR
 - Continuing outdoor education through the “mobile” campaign focused on thematic excursions within the Protected Landscape Area and the Poľana BR – “Mobile Biosphere Reserve”
 - Communication with national and regional media about the values of the Protected Landscape Area and the Poľana BR
- Build the regional identity of the Poľana Biosphere Reserve
 - Creation of an international mascot for biosphere reserves
 - Support and mentoring for youth projects and initiatives in towns and municipalities within the Poľana BR
- Support open and citizen science, linking local knowledge with nature conservation and the sustainable use of landscapes
 - Support for projects and initiatives applying the principles of citizen science
- Increase the participation of national and international scientific institutions and strengthen scientific cooperation in implementing the Man and the Biosphere Programme in the Poľana Biosphere Reserve
 - Establishing systematic cooperation between universities and scientific institutions in Slovakia and abroad
- Use innovative tools to facilitate stakeholder engagement
 - Integration of the Poľana BR Communication Strategy

5. Alignment of the Strategy with the Hangzhou Action Plan

5.1 Compliance of the strategy of Polana BR with the objectives and action goals of the Hangzhou Action Plan

Hangzhou Action Plan for the UNESCO MAB Programme and its World Network of Biosphere Reserves (2026–2035) aims not only to **protect biodiversity and enhance ecosystem resilience**, but also to **promote fair, equitable, and sustainable societies**.

The strategy defines three main objectives and a total of 34 action targets. This chapter presents how the new strategy of the Poľana Biosphere Reserve aligns with these objectives, while identifying the necessary areas for further development.

In general, it can be stated that the Poľana BR Strategy is generally well aligned with the Hangzhou Action Plan. Its strongest alignment lies in the overall MAB philosophy: strengthening the relationship between people and nature, combining biodiversity conservation with sustainable local development, and promoting the biosphere reserve as a platform for cooperation, learning and practical innovation.

The strategy is particularly strong in the areas of sustainable landscape management, traditional agriculture and livestock farming, habitat monitoring, invasive species management, environmental education, regional identity-building, youth engagement, citizen science, local producer support and sustainable tourism. It places strong emphasis on cooperation with municipalities, landowners, land users, local communities, youth, research institutions and international partners. These measures directly support the conservation, development, research and education functions of the BR.

However, the alignment is often stronger at the conceptual level than at the operational level. Several Hangzhou requirements are not yet fully translated into measurable actions. The main gaps concern the lack of explicit SDG and KMGBF mapping, limited reference to national biodiversity reporting, the lack of a long-term financing and incentive system. Further gaps concern governance and inclusion. While stakeholder participation and youth engagement are well covered, gender equality, vulnerable groups, equity aspects are not sufficiently addressed. The strategy would also benefit from clearer cooperation mechanisms with the UNESCO-designated sites, EuroMAB/WNBR structures and scientific institutions.

Detailed evaluation of the strategy's alignment with the objectives and targets of the Hangzhou Action Plan

Objective A: Contribute to the achievement of Multilateral Environmental Agreements and the Agenda for Sustainable Development by 2030 and beyond

The goal of biosphere reserves is to promote a balanced relationship between humans and nature, ensuring that ecological integrity contributes to quality of life and sustainability. To achieve this, biodiversity and ecosystem services should be integrated into territorial planning and management, contributing to inclusive approaches to conservation and sustainable development. According to the Hangzhou Action Plan, the MAB Programme “can promote peace, inclusive conservation and sustainable development, catalyse action, and inspire broader engagement by people, communities and culture to shape a sustainable future beyond 2030.”

Alignment of the Polana BR strategy with the objectives and action goals of the Hangzhou Action Plan, primarily targeting 2030 and 2035:

Action targets	Expectations	Alignment of the strategy with the action targets
1. Promote biosphere reserves as models for human-nature relations	The BR must provide inspiration to other BRs through at least one flagship project focusing on the contribution of nature to health, culture, livelihoods, and well-being.	Alignment: Strong. The entire vision and mission of the strategy are built around harmonious coexistence between humans and nature. Strong examples include support for traditional grazing systems, regional product systems, environmental education programmes, citizen science initiatives. Gaps: The Hangzhou Action Plan explicitly expects at least one identifiable “flagship project.” The strategy contains many strong initiatives but does not clearly designate a flagship model project with international visibility. Suggestions: Define one flagship model project focusing on the contribution of nature to health, culture, livelihoods, and well-being (e.g. combining grazing, habitat restoration, local products, education and ecotourism).
2. Support the 2030 Agenda for Sustainable Development	The BR should incorporate contributions to the implementation of the Sustainable Development Goals (SDGs) and the objectives of the 2030 Agenda for Sustainable Development into its management plan or overall strategy.	Alignment: Medium. The strategy strongly reflects SDG principles in substance: sustainable agriculture, climate resilience, biodiversity conservation, inclusive governance, education, sustainable tourism and local economic development. Gaps: The strategy does not explicitly map actions against individual SDGs or define SDG indicators and reporting mechanisms. No SDG monitoring framework is included. Suggestions: Further stress SDG goals, especially inclusion and equality issues, and sustainability of economic activities (e.g. forestry).

Action targets	Expectations	Alignment of the strategy with the action targets
3. Integrate biosphere reserve contributions to the Kunming-Montreal Global Biodiversity Framework	By 2030, all BRs have been integrated into national biodiversity and sustainable development planning, including national and local biodiversity strategies and action plans (NBSAPs and LBSAPs), etc. to demonstrate their value. By 2028, all BRs have identified their individual contributions to the KMGB Framework and integrated these into their management plan or strategy.	Alignment: Medium. The strategy contributes to KMGBF themes through habitat protection, restoration, invasive species control, ecological connectivity, sustainable land use, monitoring and citizen science measures. Gaps: KMGBF is not explicitly referenced; no link to NBSAP/LBSAP or national reporting. The strategy does not explicitly identify Poľana BR's contribution to KMGBF targets, it does not define a KMGBF reporting structure or reference NBSAP/LBSAP integration in operational terms. Suggestions: Add details of KMGBF contribution.
4. Conserve natural habitats	By 2035, all BRs experience no net loss of natural habitats in core areas and other high-biodiversity areas and deliver strategies to conserve and recover natural habitats in buffer zones and transition areas. By 2035, all BRs contribute to halting human-induced extinction of species, by means of habitat conservation, reducing ecosystem degradation, and maintaining connectivity and resilience.	Alignment: Strong. The strategy includes monitoring of forest/non-forest habitats, plant and animal species, with a citizen science approach. Gaps: No "no net loss" commitment, baseline or measurable conservation targets are included in the strategy. Suggestions: Define priority habitats, baseline condition, threats and target status. Add a no-net-loss principle.
5. Promote restoration projects	By 2035, all BRs have identified and prioritized degraded areas and have	Alignment: Weak. The current measure does not contain information about restoration projects.

Action targets	Expectations	Alignment of the strategy with the action targets
	initiated or promoted at least one restoration project. By 2035, all degraded areas in core areas (if any) are under restoration (including natural regeneration), 50% of degraded areas in buffer zones are under restoration, and 30% of degraded areas in transition areas are under restoration.	Gaps: No concrete restoration sites, degraded-area mapping or restoration targets are included in the strategy. Suggestions: Replace/expand the section with restoration of degraded grasslands, wetlands, riparian zones and abandoned agricultural land. Add at least one pilot project.
6. Ensure that biosphere reserves contribute to KMGBF Target 3	By 2028, the role of BRs is considered and recognized and acknowledged in national strategies towards achieving the 30x30 conservation target of the KMGBF. By 2030, all core areas in BRs have a legal protection status to qualify under KMGBF Target. By 2030, the contribution of biosphere reserves to Target 3 is incorporated into national reports.	Alignment: Moderate. The strategy supports strengthening zoning systems, integrating locally protected areas into core/buffer zones, and legal conservation strengthening. Gaps: The strategy does not explicitly define contribution to national KMGBF Target 3 reporting or establish formal alignment with national conservation accounting. Suggestions: Add regulation rules to different zones of the BR, strengthen cooperation at national level to recognize and acknowledge the BR in national strategies towards achieving KMGBF target 3.
7. Manage actions to address invasive alien species (IAS)	By 2030, priority/key IAS present in BRs have been identified, and BRs have set up related management, and monitoring and communication and information approaches for IAS established, reflecting linkages between the core	Alignment: Strong. The strategy recognises invasive plants as a challenge and notes the need to act also on private land because infestations spread into protected areas. The strategy identifies major IAS threats, and clearly addresses monitoring, implementation, prevention, communication and stakeholder cooperation measures. Gaps: Control methods and monitoring is not concrete enough, linkage between the core area, buffer zone and transition area should be more emphasised. The predator hunting point should be separated from IAS. Suggestions: Create a dedicated IAS action plan (priority species, target areas, methods, municipal/private-owner roles, citizen reporting and indicators), start specific research

Action targets	Expectations	Alignment of the strategy with the action targets
	area, buffer zone and transition area. By 2035, all BRs and/or their partner organizations have begun to implement these approaches.	activities, improve intersectoral monitoring measures and interventions with involving the relevant stakeholders.
8. Reduce pollution	The BR must adopt an integrated approach to reducing pollution from all sources and preventing emerging risks, through local assessments, measurable targets, and coordinated intersectoral actions.	Alignment: Moderate. The strategy addresses wastewater management, landfill risks, runoff, road pollution, agricultural pollution, water contamination risks and proposed measures include drainage improvements, wastewater controls, runoff reduction, and water quality monitoring. Gaps: More emphasis should be placed on measurable pollution targets, air pollution/noise/light pollution measures, and coordinated intersectoral pollution governance practices. Suggestions: Add an integrated pollution-reduction measure with local assessments and intersectoral coordination.
9. Use productive land and seascapes more sustainably	To cease all harmful or unsustainable use of biodiversity and ecosystem services (in core areas and buffer zones), the BR must develop strategies and mechanisms that enable key sectors to commit to sustainable and regenerative practices, while promoting, encouraging, and showcasing best practices through awards, branding, certification, charters, and communication initiatives.	Alignment: Strong. Measures include sustainable grazing, reduction of monocultures, support for local products, short supply chains, sustainable tourism, regenerative landscape management, certification and branding systems. Gaps: Sustainability commitments are not formalised through charters, certification or binding standards. Suggestions: Add formal sustainability standards or certification system (e.g. sustainability charter) for farmers, foresters, producers and tourism providers), elaborate thematic strategies (e.g. sustainable tourism concept), launch awareness raising campaigns.
10. Implement climate-positive action initiatives	The BR must integrate climate adaptation and mitigation actions into its	Alignment: Moderate. Climate adaptation research is explicitly included, and water management addresses seasonal water stress and retention

Action targets	Expectations	Alignment of the strategy with the action targets
	management plan, emphasizing nature-based and/or ecosystem-based approaches, and implement at least one project in this direction to contribute to reducing the causes of climate change.	Good. Climate adaptation is explicitly included in the strategy through climate adaptation research, water retention, wetland restoration, erosion reduction, continuous cover forestry, ecological corridors, ecosystem-based approaches. Gaps: The strategy focuses much more on adaptation than mitigation. Carbon neutrality targets, greenhouse gas reduction measures are missing. Suggestions: Mitigation measures should be better stressed. More emphasis should be put on water retention measures, continuous cover forestry, ecological corridors, ecosystem-based approaches and awareness raising.
11. Reform incentive structures	The BR should explore and promote positive incentives for biodiversity and sustainable development and develop sustainable financial mechanisms and structures – engaging governments, the private sector, and other stakeholders – to ensure adequate and long-term financing.	Alignment: Partial. Local product branding, producer support, market access, tourism and sustainable farming can work as positive incentives. Gaps: No dedicated financing/incentive mechanism is included in the strategy. Suggestions: Add sustainable financial models and methods, e.g. EU/national funds, CSR, sponsorship, micro-grants, tourism revenues etc.
12. Transform consumption habits	The BR must implement local education and communication activities aimed at raising awareness of sustainable development, including responsible consumption habits, sustainable and regenerative lifestyles, and sharing this knowledge beyond its borders.	Alignment: Strong. Regional products, short supply chains, education, local identity and sustainable tourism can shift consumption patterns. Gaps: Not explicitly framed as responsible consumption; no behavioural indicators. Suggestions: Add responsible-consumption communication, promote short supply chains and foster cooperation among local producers and hospitality venues.
13. Promote inclusive governance	Governance model of the BR must be inclusive, transparent and	Alignment: Strong. The strategy emphasises stakeholder cooperation, the Coordination Council, youth involvement, participatory planning, citizen science and local knowledge.

Action targets	Expectations	Alignment of the strategy with the action targets
	participatory by incorporating both scientific and local community knowledge.	Gaps: Inclusion is mostly stakeholder/youth based. Gender equality, vulnerable groups and representation rules are missing. Suggestions: Add inclusion standards (e.g. gender balance, involvement of vulnerable groups, intergenerational approaches), strengthen community engagement.

Objective B: Strengthen and develop the MAB Programme and its WNBR, including both human and financial resources, and strengthen the excellence of the Network

Objective B focuses on strengthening the MAB Programme and the World Network of Biosphere Reserves (WNBR) through improved communication, stronger governance, adequate financial and human resources, and enhanced international cooperation. It emphasizes inclusive and participatory management, the involvement of local communities, gender equality, and youth participation. The WNBR is promoted as a platform for knowledge-sharing, cooperation, peacebuilding, and solidarity, including through transboundary biosphere reserves, exchange programmes, and thematic networks. The objective also highlights cooperation with UN partners, while strengthening the role of biosphere reserves in monitoring progress towards the SDGs, the Kunming-Montreal Global Biodiversity Framework, and other international agreements through transparent and interoperable data systems.

Alignment of the Polana BR strategy with the objectives and action goals of the Hangzhou Action Plan, primarily targeting 2030 and 2035:

Action targets	Expectations	Alignment of the strategy with the action targets
14. Improve the representativeness of the WNBR by establishing new biosphere reserves, especially transboundary sites	Not relevant	Not relevant – the action target determines goals and tasks for WNBR
15. Biosphere reserves for Indigenous People	By 2035, all concerned BRs ensure the full and effective participation of Local	Alignment: Strong. The strategy strongly involves local communities, landowners, municipalities, youth and local knowledge. Gaps: Local/traditional knowledge integration is still underdeveloped operationally.

Action targets	Expectations	Alignment of the strategy with the action targets
and Local Communities	Communities in their designation, management and governance processes.	Suggestions: Explicitly recognise traditional ecological knowledge holders and develop participatory documentation methods.
16. Promote coherent data collection, advanced monitoring and assessment	Not relevant	Not relevant – the action target determines goals and tasks for the MAB Secretariat
17. Strengthen thematic and regional networks of the MAB Programme	By 2028, all thematic and regional networks have agreed work plans developed in consultation with diverse stakeholders, accompanied by outreach and communication strategies and adequate funding to ensure effective operation with active participation	Alignment: Strong. The strategy explicitly supports national and international partnerships, WNBR cooperation and knowledge exchange. Gaps: Thematic priorities and expected outputs are not defined. Suggestions: Define thematic leadership areas for Poľana BR (e.g. grazing landscapes, ecological forestry, citizen science, local products), foster cross-border or international thematic partnerships, develop joint project initiatives.
18. Promote and support coastal and marine biosphere reserves	Not relevant	Not relevant – the action target addresses the development of coastal and marine biosphere reserves
19. Encourage the effective operation and representativeness of MAB National Committees or equivalent	Not relevant	Not relevant – the action target addresses the development of the operation of the MAB National Committees
20. Develop the MAB Youth Network	By 2030, the WNBR sustains opportunities for youth to actively engage in	Alignment: Strong. The strategy includes youth surveys, participatory planning, mentoring and youth initiatives. Gaps: No explicit connection to the MAB Youth Network or international youth structures.

Action targets	Expectations	Alignment of the strategy with the action targets
	MAB-related activities at local, national, regional and global level, including the development of both formal and informal youth networks. By 2035, the WNBR has facilitated broad and stable youth participation in decision-making processes at all levels, including within BRs, to ensure the representation of youth in all bodies, including biosphere reserve management committees, biosphere reserve participatory bodies.	Suggestions: Link Pol'ana youth platforms and initiatives to EuroMAB/MAB Youth Networks.
21. Promote gender equality in MAB Programme	By 2028, all BRs address gender inequalities including through gender action plans. By 2035, all BRs collect gender-disaggregated data to assess and address their progress towards gender equality and justice.	Alignment: Weak. Gender equality is not explicitly addressed. Gaps: No gender action plan, gender indicators or representation commitments. Suggestions: Improve gender-sensitive approaches in activities, introduce gender-disaggregated monitoring data.
22. Mobilize the UNESCO family and UN partners and promoting good practices through UNESCO designated sites	By 2030, all BRs have reached out to relevant members of the UNESCO family – locally, nationally or internationally – to engage in joint work in sustainability science, education for sustainable development	Alignment: Partial. International cooperation and visibility are supported. Gaps: UNESCO-designated-site synergies are not explicitly addressed. Suggestions: Develop cooperation with UNESCO World Heritage Convention, the UNESCO Global Geoparks Programme and other UNESCO science programmes.

Action targets	Expectations	Alignment of the strategy with the action targets
	and capacity development and, in order to enhance the effective management to fulfil the criteria for designation as biosphere reserves, have explored synergies with UNESCO World Heritage Convention, the UNESCO Global Geoparks Programme and other UNESCO science programmes.	
23. Ensure that institutional support for sufficient financial and human resources are in place for biosphere reserves	By 2028, BRs, with the support of their governments, have allocated the necessary budget and staff to fulfil the three functions under MAB Programme criteria and to implement the Hangzhou Strategic Action Plan. By 2030, public and/or private sector partnerships have been strengthened at local, national and international levels by supplementing human and financial resources in biosphere reserves.	Alignment: Partial. Communication resources and staffing are mentioned. Gaps: No comprehensive financing framework for implementing the strategy. Suggestions: Add funding sources, plan new financing models and partnership mechanisms.
24. Promote capacity development through collaboration	By 2027, all BRs, National Committees, and regional and thematic networks have identified capacity development needs in the	Alignment: Strong. The strategy supports exchanges, partnerships and knowledge sharing. Gaps: No concrete capacity-development or knowledge exchange plans are identified with other BRs.

Action targets	Expectations	Alignment of the strategy with the action targets
among biosphere reserves in the WNBR	WNBR, to be addressed through implementation of the Hangzhou Strategic Action Plan. From 2026 to 2035, all BRs establish at least one exchange, partnership or twinning programme, to enhance long-term collaboration and knowledge and good practices sharing, within the WNBR.	Suggestions: Identify capacity-development needs; establish at least on exchange/twinning programme with other BRs.
25. Foster solidarity within the WNBR	By 2028 the WNBR through the MAB Program Secretariat have developed model approaches for BRs in conflict-affected regions, fostering community collaboration and promoting dialogue and peace and conflict prevention and resolution.	Not relevant – the Hangzhou Action Plan determines actions targets and measures for WNBR.
26. Enhance communication within the WNBR	By 2030, each biosphere reserve will have developed and will be using effective, interoperable, accessible, and user-friendly communication tools and platforms.	Alignment: Strong. The communication section is one of the strongest operational parts of the strategy: website, social media, mobile app, information panels, media cooperation, interpretation tools, ambassador programme etc. Gaps: Communication is mostly outward/public-oriented; interoperability and knowledge-sharing tools and methods with other BRs in the network are less developed. Suggestions: Improve communication and cooperation with other BRs to enhance information and knowledge sharing within the WNBR/EuroMAB network.

Objective C: Develop research and share knowledge and lessons learned from the WNBR to facilitate Living in Harmony with Nature, aligning with the SDGs and to inspire and influence sustainable futures and post-2030 agreements

Objective C focuses on strengthening the role of biosphere reserves as living laboratories and learning sites that support transformative change towards “living in harmony with nature.” It emphasizes interdisciplinary and solution-oriented research, international scientific cooperation, and the integration of science, education, culture and local knowledge systems. The objective promotes collaboration among biosphere reserves, universities, research institution, local communities, NGOs and businesses. It also highlights the importance of combining local knowledge with science and technology, supporting sustainable livelihoods and local well-being, protecting cultural values, and adapting the MAB Programme to future global challenges beyond the SDGs and the Kunming-Montreal Global Biodiversity Framework.

Alignment of the Polana BR strategy with the objectives and action goals of the Hangzhou Action Plan, primarily targeting 2030 and 2035:

Action targets	Expectations	Alignment of the strategy with the action targets
27. Enhance the participation of national scientific institutions and scientific collaborations in the implementation of the MAB Programme	By 2035 synergetic interactions have been developed between MAB Programme and other global transdisciplinary science programmes, exploring BRs recognized as preferred sites for research.	Alignment: Strong. The strategy contains a dedicated measure for systematic cooperation with national and international scientific institutions and universities. Gaps: Intersectoral, international scientific cooperation is not visible in the document; citizen science approaches should be improved. Suggestions: Improve intersectoral and transboundary cooperation with biosphere reserves, research and scientific institutions to strengthen the scientific profile of the BR. Strengthen citizen science approaches.
28. Facilitate research and monitoring to promote ‘Living in Harmony with Nature	By 2035, all BRs have conducted at least one interdisciplinary and/or transdisciplinary research and monitoring project, sharing information on the transition to sustainable practices within the WNBR, the MAB Programme, and beyond.	Alignment: Strong. Habitat monitoring, climate adaptation research, citizen science and sustainable landscape management support this well. Gaps: Interdisciplinary research projects are limited. Suggestions: Define interdisciplinary research topics combining biodiversity conservation, local livelihoods, participatory governance and ecosystem resilience in line with the MAB research and monitoring programme “Living in Harmony with Nature” envisaged by the Hangzhou Action Plan by 2028.
29. Remove obstacles to intra- and	Not relevant	Not relevant – the Hangzhou Action Plan determines actions targets and measures for the MAB Programme and WNBR.

Action targets	Expectations	Alignment of the strategy with the action targets
intergenerational peace, equity, gender equality and justice within the WNBR		
30. Advance open science and citizen science, promote the use of innovative and effective tools. and facilitate stakeholder involvement	By 2030, all BRs apply innovative stakeholder engagement methods to facilitate the production of robust and actionable knowledge, recognizing different ways of knowing and accompanying mediation, conflict resolution and inclusive approaches.	Alignment: Strong. The strategy explicitly supports citizen science, local knowledge, volunteer systems and innovative stakeholder-engagement tools. Gaps: Innovative methods of community engagement and the involvement of citizen science are not fully specified. Suggestions: Create an integrated digital participation and citizen-science platform; improve voluntary management.
31. Promote the use of biosphere reserves as learning sites for sustainable futures	Not relevant	Not relevant – the Hangzhou Action Plan determines actions targets and measures for the MAB Programme.
32. Foster research partnerships within the UNESCO family and within and among UNESCO designated sites	Not relevant	Not relevant – the Hangzhou Action Plan determines actions targets and measures for the MAB Programme.
33. Combine Indigenous and Local knowledge with science and	Not relevant	Not relevant – the Hangzhou Action Plan determines actions targets and measures for the MAB Programme.

Action targets	Expectations	Alignment of the strategy with the action targets
technology for sustainability		
34. Synergise education, science and culture for sustainability	Not relevant	Not relevant – the Hangzhou Action Plan determines actions targets and measures for the MAB Programme.

5.2 Recommendations for the improvement of the Strategy

Overall, the Poľana BR Strategy provides a solid and relevant basis for compliance with the Hangzhou Action Plan. To strengthen full alignment, we propose the following additions to the planned actions and interventions below.

5.2.1 *Enhancing optimal land use and landscape management*

5.2.1.1 **Supporting traditional agriculture with an emphasis on livestock farming**

The aim of the measure is to take protected areas into account as priority zones for supporting livestock farming within the new Slovak agricultural policy, while preserving healthy food production, safeguarding biodiversity, and maintaining landscape-forming functions.

Reversing the decline in livestock numbers is a critical issue in the area, particularly for preserving hay meadows and pastures, while also serving as a potential source of livelihood for residents.

The measure is in line with the expected “development” function of biosphere reserves as defined by the Man and the Biosphere Programme, namely that biosphere reserves are tasked with supporting sustainable development. While the strict protection of core zones is of key importance, transition zones provide opportunities to create conditions for economic activities that are compatible with a favourable conservation status.

Grazing-based livestock farming not only plays an important role in habitat management and the preservation of traditional landscapes but also helps control invasive species and contributes to the conservation of native breeds through genetic preservation. Livestock farming can also serve as a tourist attraction. In addition, the use of meat and dairy products from these animals can support the production of high-quality local products. Based on the marketing strategy of Poľana BR, this would primarily concern the sale of beef from independent farmers in Hriňová, and similar potential exists at Strelnický Salaš, Salaš na Príslope, and farms in Snohy and Vrchslatina.

Elimination, suppression of non-sustainable farming practices, such as the use of pesticides, planting of non-native tree species, dominance of monocultures and a loss of original floral biodiversity is very important.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to strengthen the balance between nature conservation and sustainable economic activities, to ensure KMGBF contribution, and to reform incentive structures and promote biodiversity-positive livelihoods:

- Define a Poľana BR Sustainable Farming Charter for farmers using grasslands, including biodiversity-friendly grazing, reduced pesticide use, protection of traditional landscape structures and invasive-species prevention
- Encourage grazing-based livestock farming in the region by providing professional and financial support

- Provide advisory services to farmers ensuring that farming activities can continue while preserving the natural values of grasslands and improving their ecological condition
- Publish informational materials (e.g. sustainable farming practices; eco-farming, agrotourism opportunities)
- Organise trainings and other knowledge sharing events for local entrepreneurs on business, marketing and sustainable business practices
- Launch joint projects related to the topic
- Introduce a pilot biodiversity payment / incentive scheme for farmers maintaining species-rich meadows, traditional grazing and landscape mosaics
- Carry out lobby activities to create a supportive administrative, policy, and financial environment
- Promote the production and sales of local products (see more details in chapter 6.2.1.8)
 - Develop a branded local product portfolio based on animal-derived raw materials
 - Promote and support cooperative short supply chain models for developing shared production, processing, and sales capacities
 - Promote and support cooperation among farmers – support networking, partnership building
 - Support the development of cooperative models
 - Enhance cross-sectoral cooperation (e.g. between farmers and hospitality venues, farmers and municipalities providing public catering services)
 - Support the sale of local products in local shops, markets, public catering services, tourism attractions (accommodations, hospitality venues), online platforms
 - Develop related agrotourism attractions and services, e.g. demonstration farms, farm visits, local product days, markets and festivals, thematic routes and programme packages, farm-to-table hospitality services etc.
- Launch related education and awareness raising activities
 - Develop related educational programmes
 - Launch communication campaigns to promote healthy local foods, short supply chains and agrotourism

Good example: In the Fertő Lake Biosphere Reserve, grasslands were traditionally used for grazing and hay production over a long period of time. However, due to the significant decline in agricultural activities and livestock numbers since the 1980s, major changes occurred in land use, accelerating reed encroachment and the spread of invasive alien species (such as *Elaeagnus angustifolia*). As traditional grazing-based livestock farming declined, the Fertő-Hanság National Park Directorate took over this activity to preserve the traditional landscape, rehabilitate grasslands, and restore hay meadows in the Fertő region. The grasslands are grazed by herds of Hungarian grey cattle, while in areas where short-grass habitats are needed for colonies of the European ground squirrel, racka sheep are used. In certain wetter areas, domestic water buffalo are used to control the spread of reeds. Currently, more than 1,000 Hungarian grey cattle, 500 racka sheep, and nearly 400 domestic

buffalo are being raised. In addition to habitat management, this activity also contributes to the conservation of these breeds through genetic preservation. These animals, raised outdoors in an environmentally friendly way, play a primary role in grassland management through grazing, while also providing high-quality raw materials for distinctive local meat products. Products made by the National Park Directorate from Hungarian grey cattle are highly valuable and sought after, are marketed as organic products, and have also appeared on the menus of local restaurants. The product range of the National Park Directorate includes salamis and sausages in various flavours made from Hungarian grey cattle and mangalica pig. Specialty products made from wild boar and deer have also become available. In addition, animal herds have become a tourist attraction. The demonstration farm operated by the Fertő-Hanság National Park Directorate welcomes visitors and school groups through exhibitions and educational programmes. Following the example of the national park, privately owned lands are also increasingly prioritizing the breeding of traditional extensive livestock breeds. To support this process, the Directorate established the Grassland Advisory Service within the GRASSLAND-HU LIFE Project: the purpose of this advisory service is to support farmers operating on grassland habitats through consultancy and education, ensuring that farming activities can continue while preserving the natural values of grasslands and improving their ecological condition (for example through the proper implementation of Natura 2000 requirements). Nature conservation-oriented grassland management also helps farmers access Natura 2000 compensation payments. The staff of the Grassland Advisory Service maintain continuous contact with landowners and land users. In addition, farmer forums, farmers' days, and workshops are also planned. (*Source of information: Strategy of the Fertő Lake BR*)

5.2.1.2 Support for the ecological use of forests

The aim of the measure is to ensure sufficient support for the ecological management of forests in the Poľana BR.

Based on the marketing strategy of the Poľana Biosphere Reserve, the area aims to become a model region for close-to-nature forest management and timber production by supporting traditional logging methods, such as horse- and ox-assisted logging. This can provide sustainable economic opportunities in logging and wood processing, creating employment and livelihood opportunities for residents. Preserving and showcasing traditional activities also has tourism potential (according to the marketing strategy, the Vrchslatina area could become a unique visitor attraction in this regard).

Therefore, this measure is aligned with the “development” function of biosphere reserves as defined by the Man and the Biosphere Programme, which emphasizes the role of biosphere reserves in supporting sustainable development. However, in addition to its economic objectives, **greater emphasis should be placed on sustainable forest management practices that reinforce a balanced relationship between conservation and development goals.**

Following pioneering examples of sustainable forestry, the proposed measure in forested areas is to introduce integrated forest management based on the so-called **stepping-stone model**. The essence of continuous cover forestry is that forests regenerate continuously: trees are of different ages and species, and deadwood is deliberately retained. This supports natural nutrient cycles and provides habitats, thereby contributing to the preservation of forest naturalness and the enhancement of

biodiversity. Integrated forest management focuses on preserving and enhancing forest biodiversity through three key elements (these activities are being implemented by the forestry company within the #biospherereserves project):

- Stepping stones model: This approach involves designating small conservation areas (approximately 500–2,000 m²) embedded within actively managed forest areas and excluding them from forestry operations. These patches are selected to include the most valuable parts of the forest from a conservation perspective.
- Habitat trees: These are exceptionally large and old trees located within managed forest areas that are excluded from logging. They typically contain a higher number of microhabitats than average trees and may reach the biological maximum lifespan of the species. When they die, they provide large standing and lying deadwood. They offer habitats and other resources for numerous plant and animal species, making their role in forest ecosystems irreplaceable.
- Deadwood retention: Deadwood is essential for approximately one-third of forest wildlife and plays a major role in ensuring forest resilience. It also provides important carbon sequestration and soil protection functions, helps maintain forest microclimates, and contributes to water retention. The deliberate preservation of reserve patches, veteran trees, and deadwood ensures that deadwood remains present in sufficient quantity and diversity.

Besides sustainable forestry, **ecological game management** is also important in the area as overpopulation of predators (bears and wolves) presents an increasing challenge citing reduced safety and heightened fear among both locals and tourists.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to further strengthen sustainable approaches to forest management, to make the measure more operational and monitorable; and to support habitat conservation, climate-positive action and KMGBF reporting:

- Support traditional, sustainable forest-related economic activities
 - o Support traditional logging methods, such as horse- and ox-assisted logging
 - o Support wood processing activities and the development of local timber products
- Develop integrated forest management based on the stepping-stone model (designation of reserve areas, buffer zones, habitat trees, and retention of deadwood) with defining measurable targets, e.g. number/area of stepping-stone patches, habitat trees retained, deadwood volume, hectares under continuous-cover forestry etc.
- Implement community-based continuous cover forestry pilot initiatives in several regional municipalities with active community involvement
- Promote ecological game management with reducing game populations (where permitted by legislation), protecting and developing ecological corridors, installing protection fencing if necessary and raise awareness of both residents and tourists
- Control the spread of invasive species in forested areas
- Create related tourism attractions and services:

- Organize guided tours and field excursions demonstrating ecological timber harvesting in practice
- Support woodcarving as a heritage craft (e.g. through workshops)
- Promote the collection of herbs and forest fruits combined with education on their medicinal uses and benefits
- Promote knowledge transfer and awareness-raising related to forestry and wildlife management:
 - Produce publications, information materials, and information boards
 - Organize educational programmes in schools and other educational institutions
 - Organize public programmes and events such as guided forest walks, excursions, and eco-programmes related to forests, forestry, and wildlife management
- Organize volunteer and awareness-raising programmes, such as community tree-planting initiatives and tree adoption programmes

Good example: Pilis Park Forestry (HU, Pilis BR) plays a pioneering role in Hungary in the field of continuous cover forestry and has been at the forefront of expanding this management approach to ensure permanent forest cover. Currently, this method is applied on nearly 40% of its managed forest area, covering approximately 22,000 hectares. The conservation and tourism developments of Pilis Park Forestry are closely interconnected: maintaining continuous forest cover also helps preserve and strengthen ecosystem services, significantly contributing to the forest's public welfare and recreational functions. Based on a trilateral agreement between the Municipality of Pilisborosjenő, Pilisi Parkerdő Zrt., and Danube-Ipoly National Park Directorate, a 25-hectare experimental continuous cover forest dominated by different types of oak is being established near the residential area of Pilisborosjenő. Within the #biospherereserves project, this forest area will be managed using continuous cover forestry methods with the involvement of the local community. One to two canopy gaps per hectare (each covering 200–700 m²) will be designated, and their maintenance – under the guidance of forestry professionals – will be carried out by volunteers. (*Source of information: Strategy of the Pilis BR*)

5.2.1.3 Optimal management of water resources

The aim of the measure is to ensure the flow capacity and proper functioning of water resources.

Although watercourses and standing waters are relatively limited in the Poľana Biosphere Reserve, the area has a highly sensitive water system. The protection of water quality and landscape stability is therefore very important while balancing agriculture, forestry, infrastructure development, and tourism pressures. Due to climate change, increasing seasonal water stress makes the protection of water resources and wetlands, as well as the improvement of water retention capacity, increasingly urgent.

Therefore, the measure is in line with the “preservation” function of biosphere reserves as defined by the Man and the Biosphere Programme.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to better address water management and landscape risks with a focus on

improving water quality, strengthening water retention capacity, and reducing seasonal water stress, as well as to improve an integrated pollution approach:

- Introduce regular monitoring of surface and groundwater status, including drinking water quality based on measurable indicators
- Protect and improve the ecological status of watercourses and water resources
 - o Manage water abstraction and prevent over-extraction
 - o Strengthen protection around the Hřiňová reservoir and other drinking water sources
 - o Restrict polluting activities in water protection zones
 - o Monitor landfill sites and prevent illegal dumping
 - o Introduce stricter land-use controls near protected water resources
 - o Reduce road-related pollution through improved drainage and reduced use of de-icing salts
- Strengthen flood prevention and reduce pollutant runoff and landslide risks
 - o Implement integrated flood risk management measures along the Slatina River, particularly near the Hřiňová reservoir
 - o Establish early warning and monitoring systems for sudden flooding caused by heavy rainfall and rapid snowmelt
 - o Create buffer zones (~20 m) along watercourses to reduce pollutant runoff
 - o Support the application of sustainable forestry practices, including erosion-sensitive management, prevention of deforestation in landslide-prone areas, and strengthening forest cover on critical slopes near water resources
- Improve wetland and ecosystem protection
 - o Restore hydrological ecological corridors
 - o Reduce disturbances in sensitive areas by restricting or prohibiting access where necessary
 - o Preserve and restore small water bodies, wetlands, and ponds
 - o Develop management protocols for invasive species that avoid risks to water quality
- Strengthen water retention capacity of the area
 - o Restore natural floodplains, wetlands, and riparian vegetation
 - o Improve small-scale natural water retention (retention ponds, infiltration zones, restoration of natural streams)
 - o Increase surface permeability and limit further expansion of impermeable surfaces in sensitive areas
 - o Provide professional support to local stakeholders (municipalities, businesses, citizens) to improve water retention and climate resilience:
 - Support the creation of digital green asset / green infrastructure inventories
 - Support the renewal and adaptation of local regulatory frameworks (e.g. zoning and land-use plans) and strategies to support green infrastructure aligned with regional hydrological goals

- Promote green and blue infrastructure solutions (retention basins, rain gardens, green roofs and walls, infiltration systems), permeable construction materials
- Support development of biodiverse urban green spaces and ecological corridors
- Support the modernisation of rainwater management, including rainwater harvesting and local reuse systems
- Support the improvement of wastewater management
 - Introduce and promote environmentally safe wastewater solutions for municipalities, businesses, and households
 - Monitor and reduce untreated wastewater discharges into the environment
- Implement joint projects and initiatives to address water management and landscape risks
 - Identify integrated pollution reduction pilot project covering wastewater, road runoff, illegal dumping, pesticide leakage and landfill risks, with indicators and responsible actors
 - Implement stream restoration projects through regional cooperation (including invasive species removal, riverbed rehabilitation, riparian buffer zones, and nature-based solutions with community involvement)
 - Implement remediation measures where environmental risks persist, in cooperation with local and regional stakeholders
- Organize knowledge-sharing activities and communication campaigns to raise awareness among municipalities, farmers, and citizens
- Strengthen cooperation between municipalities, conservation authorities, water management institutions, and landowners to ensure integrated planning and governance

Good example: In the settlement Pilisborosjenő (located in the Pilis Mountain, in the Pilis BR), the proper drainage and utilization of stormwater has been an unresolved issue for years. Through the *“Liveable Settlements”* programme, open drainage channels are being constructed in two intervention areas. In addition, the project places strong emphasis on water retention measures: retention basins and rain gardens are being created to capture and temporarily store stormwater. These blue infrastructure elements are complemented by green infrastructure developments, including vegetation planting. The settlement’s new MOUNT GREENFRA project (supported by the Interreg HUSK Programme) also supports municipal water management efforts. A LiDAR-based survey of the entire settlement will be carried out, forming the basis for a digital terrain model, land cover model, roof cadastre, and a comprehensive stormwater management plan. Further planned actions include assessing the potential restoration of a spring, designing streambed stabilization near a local bridge, planning and partially implementing improvements to a stream, converting another stream into a rain garden, and preparing plans for upgrading the drainage section along the main road. (Source of information: www.pilisborosjeno.hu, Mount Greenfra project communication)

5.2.1.4 Habitat protection

The aim of the measure is the regular monitoring of forest and non-forest habitats, as well as plant and animal species in the Poľana Biosphere Reserve with a strong citizen science approach.

Monitoring activities in habitat protection are essential for understanding the condition of ecosystems and ensuring that conservation efforts are effective. The main purpose of monitoring is to track changes in habitats, detect threats such and evaluate whether protection measures are working. Monitoring also helps management organisations of the BR and stakeholders (e.g. municipalities) make informed decisions and respond quickly to problems before serious damage occurs.

Therefore, the measure supports the “preservation” function of biosphere reserves as through continuous monitoring and proper management measures, habitats can be better protected, biodiversity can be preserved, and ecosystems can remain healthy for future generations.

Monitoring activities can be effective only with the involvement of local stakeholders (municipalities, NGOs, enterprises, farmers, etc.), contributing to even stronger regional collaboration.

Monitoring also provides valuable opportunities for public engagement through citizen science, where non-professionals contribute to data collection and observation. Through these citizen science approaches; the measure is closely linked to the “research and education” function of the BRs.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to directly addresses Hangzhou’s habitat conservation targets:

- Define a no-net-loss principle for core and high-biodiversity areas, supported by baseline habitat mapping and regular condition assessment
- Strengthens coherent data collection, monitoring and reporting
 - o Create a BR-wide monitoring indicator system covering habitats, species, invasive species, water, visitors, land use, participation and education etc.
 - o Improve measurement technology and equipment to collect accurate data
 - Use cutting-edge monitoring tools, e.g. satellite images, drones
 - Install environmental monitoring equipment and measurement stations with shared data systems
 - Install webcams (also for communication and awareness purposes)
 - Install camera traps
 - Develop digital tools (e.g. mobile applications) to support monitoring actions
 - o Conduct regular field surveys to observe plants, animals, and environmental conditions in close cooperation with local and regional stakeholders and scientific organisations

- Create databases and sharing information between researchers, governments, and conservation groups
- Elaborate thematic reports for national and international policies
- Strengthen citizen science approaches with involving local communities in observing, reporting and conservation activities (more details: Chapter 6.2.3.3)
- Cooperate with conservation organizations and local communities to implement protection measures as part of everyday life and local economic activities
 - Introduce monitoring projects for the protection of endangered species in close cooperation with the stakeholders
 - Conduct visitor monitoring to explore visitor flows and visitation patterns
 - Support municipal tree replacement programmes (assessment of invasive non-native species, recommendations for native species, preparation of professional guidance materials, coordination of regional programmes)
 - Support the elimination, suppression of non-sustainable farming practices, such as the use of pesticides, planting of non-native tree species, dominance of monocultures and a loss of original floral biodiversity
 - Support the introduction of sustainable forest management practices with developing integrated forest management, reducing the extent of plantation forests, and controlling invasive and non-native species
- Prepare annual progress reports against SDGs, KMGBF and Hangzhou targets

Good example: In the Pilis Biosphere Reserve, the mosaic of built-up areas and natural habitats has led to an unintended consequence: hybridization between domestic cats and the European wildcat. This genetic mixing poses the most significant current threat to the species, as it degrades the genetic integrity of this strictly protected animal. In response, the Budakeszi Wildlife Park, the Danube-Ipoly National Park Directorate, and Pilisi Parkerdő Zrt. launched the Wildcat Conservation Programme in March 2021. The programme aims to study and monitor the wildcat population within the Pilis forests, focusing on habitat conditions, reproduction, and genetic purity to support the long-term survival of the species. Key actions include habitat restoration to ensure suitable hunting grounds and shelter, regular population monitoring, and genetic analysis. Awareness-raising and educational activities are also an important component, particularly promoting responsible domestic cat ownership to reduce hybridization risks. Fieldwork involves the use of camera traps, collection of genetic samples, and laboratory analysis. Wildcats bred in captivity at the Budakeszi Wildlife Park are also being reintroduced to strengthen wild populations and preserve biodiversity. Within the *#biospherereserves* project, further steps are planned: deploying baited camera traps (e.g. with fish oil or catnip) to collect fur samples, conducting genetic analyses of collected samples and carcasses, and using live traps and satellite tracking to monitor individuals with pure genetic backgrounds. The data collected will support the development of a comprehensive species conservation plan. Related communication activities – such as social media posts, sharing webcam videos, and distributing informational materials – serve to inform and raise awareness among the public. (*Source and further information: #biospherereserves project, website and social media platform of Duna-Ipoly National Park Directorate, Pilis Park Forestry and Budakeszi Wildlife Park*)

5.2.1.5 Support nature restoration projects

The BR strategy currently identifies support for the market access and promotion of local products as a measure under this action objective; however, the link between this measure and the objective is not clear.

It is recommended to define measures that directly target the conservation, maintenance, and restoration of natural and semi-natural habitats in favourable conservation status, as well as the protection of endangered plant and animal species.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to prioritise degraded areas and restoration progress by zone, and to create a visible good-practice project and strengthens the BR's model function:

- Implement monitoring and research projects to identify the current situation of endangered species and habitats
- Identify and map degraded areas by zone (core, buffer and transition area), define priority restoration sites with measurable indicators (e.g. expected restored hectares)
- Carry out restoration measures involving relevant nature conservation and other organisations (e.g. municipalities, forestry, NGOs)
- Strengthen community engagement in conservation projects – involve local communities, schools, volunteers and tourists into these activities
- Promote flagship restoration projects implemented within the framework of the #biospherereserves project

Good example: The only habitat of the endangered plant species *Thlaspi montanum* L. in Hungary is located in the Pilis Biosphere Reserve, specifically in the cadastral area of Pilisborosjenő. Over the past 30 years, its population has declined dramatically, bringing the species to the brink of extinction.

In 2021, the mayor of Pilisborosjenő, Pilis Park Forestry, and the Duna–Ipoly National Park Directorate agreed to jointly implement measures to protect *Thlaspi montanum* L. This tripartite agreement commits the partners to cooperate on conservation actions, including annual research and monitoring of the species' population and habitat conditions. Monitoring activities have been carried out regularly to assess changes, identify spatial and temporal patterns, determine key risk factors, and propose appropriate conservation measures. Reports indicate that the main threats to the species have shifted due to climate change. While black pine previously posed the greatest threat through shading – leading to recommendations such as crown thinning, shrub reduction, and brush clearing – by 2024 this pressure had largely diminished as heat waves caused the decline of pine stands. Instead, wild boar disturbance has emerged as the primary threat. The aim of this pilot is therefore to halt the decline of *Thlaspi montanum* L. through targeted in-situ conservation interventions. By restoring its unique habitat, the species can be preserved within an 8-hectare area near the settlement of Pilisborosjenő. In parallel, a formal conservation plan will be submitted to the Ministry of Agriculture to ensure a long-term strategy for protecting both the species and its habitat. Community engagement is also a key component of the pilot: volunteers are actively involved in habitat restoration activities, such as shrub thinning and brush clearing in the area around Pilisborosjenő. (Source and further information: #biospherereserves project communication platforms)

5.2.1.6 Management measures to address invasive non-native species

The aim of the measure is to introduce interventions to address invasive non-native species with special focus on supporting the hunting of predators of the Western capercaillie (where it is permitted by legislation).

The spread of invasive plant species is an increasing challenge, affecting both nature conservation and land management. In addition to the efforts of nature conservation organizations, controlling invasive species requires action on private land as well, since infestations there can spread into protected areas.

The measure is closely linked to the “preservation” function, as controlling invasive non-native species that displace native populations is a key task in protecting and enhancing biodiversity. In addition, it also supports the research and education function and contributes to the sustainable development of the area.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to improve the effectiveness of control mechanism by ensuring strong regional cooperation, active involvement of local communities, the use of proven best practices and to make invasive alien species (IAS) management more concrete and compliant with Hangzhou’s monitoring and implementation requirement:

- Develop a priority IAS list with target species, affected areas, control methods, monitoring frequency and responsible stakeholders
- Prepare and implement invasive species control measures in cooperation with relevant municipalities and regional stakeholders (e.g. forestry, local governments, NGOs, private landowners) using a combination of mechanical, chemical, biological, and habitat management methods:
 - o Launch pilot projects to test innovative or site-specific control techniques
 - o Review and adapt national and international best practices (literature review, study visits)
 - o Conduct research to identify the most effective locally applicable methods
 - o Carry out removal and restoration projects, including reintroduction of native species
- Strengthen regional cooperation to control invasive species:
 - o Promote knowledge sharing and exchange of experience – with special focus on private lands
 - Develop practical information materials (manuals, brochures) for municipalities, farmers, and NGOs
 - Organize workshops and information forums involving key stakeholders
 - Implement joint regional projects for invasive species control
 - o Support hunting of predators of the Western capercaillie (where it is permitted by legislation)
- Increase public engagement and participation:
 - o Establish a community-based monitoring/reporting system for invasive species observations
 - o Establish a volunteer “citizen ranger” network

- Launch awareness campaigns and provide practical guidance (impacts of invasive species on native biodiversity, identification guides, promotion of control methods and native alternatives, environmentally friendly pest control methods such as biological mosquito control, environmentally friendly practices)
 - Develop publications and practical guides
 - Publish best practices and their potential for replication
 - Provide online information via social media platforms
 - Organize forums and workshops on the topic
- Involve residents in regional projects, launch initiatives targeting private lands (e.g. plant exchange programmes replacing invasive species with native plants)
- Organize volunteer activities such as invasive species removal and habitat clean-up actions

Good example: In the Pilis Biosphere Reserve, a pilot intervention of the #biospherereserves project targeting the highly competitive invasive species Bohemian knotweed (also known as Japanese knotweed) was implemented along the most heavily infested sections of the Dera Stream. The project was carried out by the Danube-Ipoly National Park Directorate in cooperation with local municipalities. Within the pilot, four different control methods were tested: repeated mowing several times per year to weaken the plants; covering with black foil to block light; metal grid covering to mechanically cut emerging shoots; and grazing with goats to remove young growth. The evaluation of these methods will provide the basis for developing an effective large-scale eradication strategy.

Another pilot project targeted the widespread and highly aggressive invasive species Tree of heaven. Within the framework of a replacement programme, the Danube-Ipoly National Park Directorate and the Municipality of Pilisborosjenő conducted a survey of the species across all settlements in the BR area. Based on this assessment, and in cooperation with local municipalities, selected individuals were removed to slow the spread of the species. The removed trees are replaced with native species, while the harvested wood is reused by municipalities within social firewood programmes. (Source and further information: #biospherereserves project)

5.2.1.7 Continue research on climate change adaptation, particularly in strictly protected areas

The aim of the measure is to manage research activities within the Pol'ana Biosphere Reserve with the aim at assessing the current level of climate change adaptation and underpinning future climate resilience measures.

The measure is closely linked to the “research and education” function, as the UNESCO MAB Programme states that biosphere reserves should support scientific research and monitoring for nature conservation purposes. As climate change poses increasing challenges for regions, assessing its impacts and evaluating the effectiveness of potential interventions is essential for improving climate resilience.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to expand scientific research to additional related areas that can help underpin the region's adaptation capacity and to strengthen climate-positive mitigation action besides adaptation efforts:

- Conduct research activities related to species conservation and habitat restoration with measurable indicators
- Implement ecological studies, for example on water resource protection and water retention
- Carry out impact assessments of various activities (e.g. mountain biking, large-scale developments), including monitoring their environmental and ecosystem effects with measurable indicators
- Conduct targeted surveys to support project preparation and strategic decision-making (e.g. tourism demand analysis, resident satisfaction surveys)
- Add mitigation-oriented actions, e.g. carbon storage in forests, wetland restoration, low-carbon tourism mobility and local renewable-energy options where compatible with conservation

5.2.1.8 Support regional producers

The aim of the measure is to ensure market access and promotion of regional products in order to support local economic development.

Biosphere reserves can play an important role in initiating or supporting the development of regional short supply chains by establishing coordinated supply systems. This approach also supports regional branding and strengthens the role of the biosphere reserve as an umbrella organization in local economic development.

The measure is in line with the expected “development” function of biosphere reserves as defined by the UNESCO MAB Programme, according to which biosphere reserves are tasked with supporting sustainable development. Linking production, processing, and consumption at the regional level can enhance the competitiveness of local producers, create employment, and contribute to brand building.

The Poľana region already has an established regional brand, Regional Product Podpol'anie, which guarantees authenticity, local origin, and quality. Many local producers operate under this label.

In line with the expectations of the Hangzhou Action Plan, the following measures are therefore suggested to place emphasis on strengthening cooperation among local producers, on integrating local products more effectively into the hospitality and tourism sector and on general promotion of local products among citizens with the aim to strengthen sustainable consumption:

- Drafting policy recommendations to decrease bureaucracy and excessive regulation to create optimal conditions for local producers
- Improve biodiversity-friendly production criteria in the local brand of Poľana
- Develop regional databases and professional cooperation
 - o Create a local product database covering available products (farm products and forest goods, handicraft items), including seasonal volumes, quality, level of processing, logistics, etc.
 - o Build producer networks and explore cooperation opportunities
 - o Assess demand and willingness to cooperate among local restaurants and public catering providers

- Provide training and consultations for local entrepreneurs on marketing and sustainable business practices
 - Cooperate with chambers of commerce, local governments, and business associations to foster partnership
- Strengthen links between producers and hospitality sector
 - Organize networking events connecting producers and hospitality providers
 - Arrange farm / workshop visits and study tours in cooperation with farmers, artisans
 - Organize local product market days targeted specifically restaurants, hotels as main consumers
- Promote local food in hospitality and tourism sector
 - “Flavours of the Poľana BR” – Develop standardized recipes based on local and forest products (including ingredients, preparation methods, cost calculations, pricing, food photos)
 - Provide ready-to-use recipes for restaurants, linked with relevant local suppliers
 - Encourage the inclusion of local dishes in restaurants and accommodation services:
 - Organize thematic weeks where multiple venues offer dishes based on shared recipes
 - Support the introduction of rural “guest table” services
 - Launch picnic basket programmes using local products
 - Develop and introduce gastro- and heritage craft-based tourism attractions, e.g. regional thematic routes, thematic packages, regional product markets, events and festivals
 - Encourage the development of touristic services at farms, workshops e.g. demonstration farms / workshops, open workshops, farm visits, tasting sessions, handicraft workshops, agrotourism services
- Encourage and support the integration of local products into public catering services
- Engage residents and promote home use of local products
 - Develop a “Flavours of the Poľana BR” cookbook
 - Produce online cooking content (e.g. video series)
 - Organize cooking and handicraft courses and competitions (for residents and hospitality providers)
 - Host information days on foraging (e.g. mushrooms, herbs, plant identification, protected area awareness)
 - Organize community preserving actions (e.g. jams, syrups)
 - Organise local market days and events
- Launch communication campaigns to promote local products, short supply chains and sustainable consumption
 - Develop promotional tools (menu inserts, producer info cards, recipe cards, collectible formats)
 - Organize events, tastings, handicraft workshops and participation in regional programmes

- Initiating short supply chain models in the region (e.g. community-supported agriculture (CSA))
- Starting a social enterprise to process, sell and promote local products – both as ingredients and as local branded souvenirs
 - o Develop a branded souvenir portfolio based on local products
 - o Establish a shared processing facility for producing, packaging, storing (and if needed cooling) “Flavours of the Poľana BR” products, also serving as a logistics hub
 - o Produce and sell processed goods for hospitality and smaller retail formats (e.g. jams, syrups, wild garlic cream)
 - o Install local product shelves in hospitality venues, hotels and attractions for display and sales
 - o Organise local market days / weeks in retail shops (on the longer run with consistent availability)
- Develop joint projects with municipalities to implement local product platforms and programmes (e.g. markets, processing facilities, cooking studios, events)

Good example: The Entlebuch Biosphere Reserve applies its own regional brand, Echt Entlebuch, for locally produced food. By 2024, more than 500 products from 32 businesses were certified under the label. In 2013, 12 certified producers and the biosphere reserve management established Biosphäre Markt AG, a company dedicated to the development, marketing, and distribution of Entlebuch products. Its role is to support market access and increase sales for local partners. The company brings together producers, businesses, the regional agricultural forum, and municipal stakeholders, ensuring strong institutional backing. Certified products are widely available: most local retailers in the region carry them, while outside the region the Coop offers the broadest selection. Products are also sold at markets, tourist locations, and online, including curated gift baskets. The biosphere reserve collaborates closely with local restaurants, where regional dishes and products are featured. Partner restaurants are required to indicate product origin and producers on menus and to use seasonal ingredients. Biosphäre Markt AG centralizes marketing and sales, offering a one-stop portfolio to customers while leveraging synergies across sectors, including tourism. Although revenue-generating, the company is not profit-driven; its primary goal is regional value creation and sustainability. Its operation is financed through a mix of membership fees and public (cantonal) funding. The company has also participated in a six-year regional development project aimed at increasing value added in agriculture and modernizing processing structures, while also pursuing ecological, social, and cultural objectives (e.g. increasing the share of organic inputs and renewable energy use). A structured partnership programme involves local businesses (restaurants, accommodation providers, bakeries, etc.), requiring them to use local products, communicate their origin, and contribute to awareness-raising about the biosphere reserve. *(Sources and further information: UNESCO Entlebuch BR Geschäfts- und Nachhaltigkeitsbericht 2024)*

5.2.1.9 Promote a holistic approach to landscape planning

The aim of the measure is to implement legislative changes in landscape planning, to create a methodology for comprehensive landscape assessment, and to ensure that the outcomes are binding.

To support the achievement of this goal, the measure targets the support and provision of professional guidance for local, municipal-level environmental and nature conservation activities.

The measure is in line with the goals and functions of a biosphere reserve.

In line with the expectations of the Hangzhou Action Plan, the following measures are therefore suggested to add complementary policy recommendations to this and to highlight the explicit contribution of the strategy to Kunming-Montreal Global Biodiversity Framework (KMGBF) and Sustainable Development Goals (SDG) targets.

- Improve explicit mapping of the strategy's contribution to SDG and KMGBF targets by
 - o documenting the legal protection and conservation value of core areas
 - o refining the zoning system and integrating locally protected natural areas into core or buffer zones where justified
 - o identifying biodiversity-rich areas in buffer and transition zones
 - o assessing which areas could qualify as OECM-type areas
 - o promoting sustainable agriculture and ecological forestry as conservation-compatible land uses
 - o strengthening ecological corridors and habitat connectivity
 - o introducing monitoring indicators for conservation effectiveness
 - o cooperating with the Slovak MAB Committee and national authorities so that Poľana BR's contribution is reflected in national 30x30 reporting
- Create an SDG and KMGBF alignment matrix linking every strategic measure to relevant SDGs and KMGBF targets to make international compliance explicit and easier to report
- Supervise and (if necessary) refine the zoning system of the Poľana Biosphere Reserve to enable the integration of locally protected natural areas currently located in the transition zone into core or buffer zones
 - o Propose and support procedures for designating local natural values as protected areas
 - o Integrate locally protected natural areas within settlements into the core or buffer zones of the biosphere reserve
- Define exact zone-specific regulations (e.g. preferred activities, restrictions, key indicators) and prepare and share clear information materials with stakeholders

5.2.2 Strengthening and developing international cooperation

5.2.2.1 Maintain and support new job opportunities in the fields of agriculture, forestry, and tourism

The aim of the measure is to strengthen sustainable landscape management by building capacities, fostering stakeholder cooperation, and actively involving local stakeholders and communities – including youth – in conservation planning and implementation through participatory processes and stronger partnership networks.

Tasks defined by the strategy include:

- Developing projects aimed at strengthening capacities in sectors responsible for landscape stewardship and its sustainable use
- Involving young people in the management of the Poľana Biosphere Reserve through surveys mapping youth needs, participatory planning, and focus groups
- Engaging landowners, land users/managers, local governments, and local communities in practical nature conservation activities (particularly the management of protected areas, species monitoring, and preparation of nature conservation documentation)
- Strengthening stakeholder networks through joint projects, events, and the Coordination Council of the Poľana Biosphere Reserve

The measure is in line with the main goals and functions of the BRs: it supports preservation functions while also strengthening sustainable economic and social development goals. The planned interventions may also be incorporated into additional measures.

In line with the expectations of the Hangzhou Action Plan, it is suggested to strengthen youth participation in international cooperations with improving the Poľana Youth Working Group and connecting it to the MAB Youth Network.

It is also important to address the currently weak gender equality and inclusion dimension of the strategy with adding gender-balanced and inclusive participation rules (as a horizontal principle) for youth, farmers, landowners, municipalities and NGOs.

Example: The Julian Alps Biosphere Reserve places a particularly strong emphasis on involving young people. It has established a **Youth Council**, which functions as an advisory body to the BR's governing structure. Any young person aged 16–30 living in the municipalities within the BR territory can become a member. The Youth Council plays an active role and can submit proposals, ideas, and issues to the governing bodies of the Reserve. The rules governing its operation were developed directly by the young people who first joined the programme: these regulations define the Council's objectives and functions, as well as its operational rules. The Youth Council is represented by a spokesperson, whose role is to maintain contact with the BR governing bodies and external stakeholders, and to convene and ensure the functioning of the Council. The spokesperson is appointed for one year and cannot be re-elected for the following term. Council meetings can be convened by the spokesperson, at least half of the members, or the BR governing body. Written summaries and minutes are prepared for all meetings. Decisions are made by majority vote of those present. The Youth Council independently decides on the creation of thematic working groups to discuss and explore specific topics in depth. The BR allocates part of its annual budget to support the functioning of the Youth Council and also provides venues for its meetings.⁷ The Julian Alps BR launched the EUROPARC **Junior Ranger programme** in 2007 within its territory⁸. The Junior Ranger camps include a wide range of activities allowing participants to discover the flora, fauna, and natural values of protected areas. Young participants share their experiences with families, schools, and friends, helping to spread awareness about protected areas and their importance. The programme is

⁷ Source: REGULATION OF THE YOUTH ADVISORY BOARD OF THE JULIAN PREALPS NATURE REGIONAL PARK; <https://biosferaalpigiulie.it/en/youth-council/>

⁸ The Junior Rangers programme is an initiative of the EUROPARC Federation, launched in 2002 with the aim of involving young people living in protected areas through participation in environmental education camps.

designed for boys and girls aged 12–14 living in the BR area. During the camp, participants receive information about the protected area, its characteristics and activities; take part in guided tours led by conservation professionals and specialists; carry out observations, monitoring, and small practical conservation tasks; and participate in sports activities and games. Every summer, the region's two UNESCO MAB Biosphere Reserves – the Julian Alps and Miramare BR – organise a summer camp for young people living in the area, supported by the Friuli Venezia Giulia Region. The camps involve awareness-raising activities on topics such as sustainable development, the relationship between humans and nature, and biodiversity conservation. Participants are aged 15–18 and take part in various activities within the two Biosphere Reserves, such as hiking, cycling tours, rafting, and boat excursions. *(Source and further information: REGULATION OF THE YOUTH ADVISORY BOARD OF THE JULIAN PREALPS NATURE REGIONAL PARK; <https://biosferaalpigiulie.it/en/youth-council/>)*

5.2.2.2 Establish appropriate destination management using the UNESCO – Pol'ana Biosphere Reserve brand to support the development of tourism and ecotourism

The aim of the measure is to improve destination management in order to support sustainable tourism in line with environmental considerations. It contributes to enhancing the area's attractiveness, increasing visitor numbers, raising awareness of the biosphere reserve, and creating jobs in the tourism sector.

The measure is in line with the “development” function of biosphere reserves as defined by the Man and the Biosphere Programme as it supports sustainable tourism development of the area.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to target the overall development of the tourism ecosystem, including institutional, financial, and strategic frameworks, as well as the joint development of attractions, services, and infrastructure along the tourism value chain:

- Improve strategic, policy, and financial frameworks supporting slow tourism
 - o Elaborate a regional slow tourism development strategy
 - o Provide professional support for the development of local-level strategies and policies (e.g. tourism and economic development plans) in line with the mission and values of the BR
 - o Develop policy recommendations for national-level tourism and economic development strategies and legislation to integrate the UNESCO MAB Programme into the strategic documents of local governments and regional authorities
- Establish a tourism destination management organisation involving local stakeholders, including municipalities, regional and local tourism organisations, local action groups, and tourism service providers
 - o Build partnership
 - o Prepare the organisational frameworks and establish the organisation with proper human, technical and financial capacities
 - o Organise regular meetings, discussions

- Joint development of tourism products and services
 - Create integrated regional tourism products and packages that link individual natural and cultural assets, attractions, handicrafts, and monuments into more attractive joint tourism offers
 - Thematic routes and educational trails (physical or virtual)
 - Hiking routes and treasure-hunting programmes
 - General, seasonal, and target-group-specific tourism packages
 - Provide interactive interpretation tools for trails and tours, such as interactive maps, information boards, virtual guides, mobile applications, and activity workbooks
 - Develop experiential tourism programmes, including guided tours, wildlife observation, nature photography tours, creative workshops, family programmes, and team-building activities
 - Offer conservation-based visitor programmes (e.g. tree planting, clean-ups, wildlife monitoring) and community-based tourism initiatives
- Improve visitor-flow management
 - Introduce visitor monitoring to track visitor flows and patterns
 - Spreading visitors by target group specific programmes and services across different times (e.g., early morning, late evening, or off-season) to minimize peak-time congestion
 - Guiding visitors away from overcrowded hotspots to lesser-known attractions through thematic routes, guided tours, information services, shuttle services etc.
 - Communicate live data to tourists about waiting times and crowded spots, using apps or signage to help them plan visits during off-peak times
 - Using booking system or limiting entry to sensitive areas
 - Introduce visitor-impact monitoring at key tourist sites with measurable indicators and follow-up mechanisms
- Improve and promote sustainable mobility: shuttle services, public transport links to trailheads, cycling-friendly access etc.
- Joint development of events
 - Harmonise and promote local events through a shared regional event calendar
 - Organise joint thematic events at the regional level within the BR
- Joint sales of local values, attractions, and services
 - Develop a unified website with an integrated booking system
 - Introduce joint pricing solutions, such as regional discount schemes, combined offers, and a BR tourism card system
 - Integrate local products (food, crafts, souvenirs) into tourism offers and promote on-site sales through dedicated points at attractions, hospitality venues, and information centres
- Improve information services
 - Create a network of tourism information services (information points presenting the values, attractions, and services of the BR)
 - Develop and share informational materials

- Support the development and quality improvement of accommodation and catering services
 - o Promote and support eco-friendly accommodation facilities
 - o Encourage hospitality providers to offer local food and cuisine in cooperation with local producers
 - o Establish a regional quality trademark system for tourism products and services
- Promote slow tourism through regional cooperation by implementing communication and awareness-raising campaigns
 - o Improve online presence (create an official website for the Poľana BR, expand presence on social media platforms)
 - o Develop information and communication materials
 - o Publish online and offline ads and PR articles
 - o Improve content marketing
 - o Improve event marketing
- Join Tourism4All movement for provide equal access to tourism products and services

Good example: The **Bliesgau UNESCO Biosphere Reserve** in Germany is located in the southeastern part of the Saarland, on the border with France. With its orchid-rich meadows, beech forests, endangered animal species, and impressive river landscapes, it has been part of the UNESCO MAB Programme since 2009. One example of promoting environmentally friendly tourism in the Bliesgau Biosphere Reserve is the development of bus line 501 into the so-called “Biosphärenbus.” Today, this service forms the backbone of public transport in the region. The Biosphärenbus 501 operates on a 54-kilometre route, running hourly from Homburg via Blieskastel and Reinheim to Kleinblittersdorf and back, every day of the week from early morning until late evening. The bus connects numerous recreational and ecotourism destinations. It is linked to rail transport at three stops, enabling easy, car-free mobility within the reserve and serving as a model for sustainable transport practice. In addition, special excursion services are offered, often combined with guided interpretation and experiential elements, such as the “Shuttle zur Wanderung” programme, where transport to hiking routes is provided along with guided tours and refreshments. During the 2025 orchid season, a dedicated shuttle bus was launched for the first time from Saarbrücken to the orchid-rich area of Gersheim, in the heart of the Bliesgau Biosphere Reserve. The initiative aimed to reduce private car use, illegal parking, and traffic congestion, as well as to ease the heavy visitor pressure typically occurring during the flowering season. From mid-April to the end of June, the service operated every Saturday, Sunday, and public holiday, once per day, free of charge but requiring prior registration. Trained guides accompanied passengers on the bus, introducing them to the landscape and its values. After arrival, visitors could take part in guided walks in the Gersheim orchid area and explore its unique habitats and rich diversity of orchid species. *(Sources and further information: <https://www.biosphaere-bliesgau.eu/>, <https://www.saarpfalz-touristik.de/en/experiences/hiking/hiking-by-bus-and-train>)*

5.2.2.3 Support international partnerships and projects within the World Network of Biosphere Reserves

The aim of the measure is to strengthen and expand partnership networks in Slovakia and internationally to enable knowledge exchange, mutual learning,

and the development of joint projects. It focuses on cooperation with biosphere reserve management organisations within the World Network of Biosphere Reserves, as well as with national and international institutions, public bodies, and NGOs.

The measure supports the role of the biosphere reserve management as a knowledge hub and coordination platform that facilitates cooperation and dialogue among stakeholders, while also enhancing the international visibility and reputation of the biosphere reserve. Therefore, the measure is in line with the mission of biosphere reserves.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to build strong professional partnerships and expert networks at both national and international levels to share experience and develop joint solutions:

- Build and develop professional partnerships with regional, national stakeholders
 - o Organise regular meetings, consultations, and partnership forums (to build partnerships, exchange knowledge and experience, and share good practices)
 - o Establish thematic (sector-specific) working groups at regional level (to discuss current issues, exchange knowledge and experience, share good practices, and find joint solutions), e.g. in tourism, economy, production/crafts, heritage protection, and nature conservation
 - o Knowledge sharing – organise information forums, workshops, conferences, and study visits for relevant stakeholders
 - o Elaborate knowledge sharing materials (e.g. best practice catalogue)
 - o Online communication – send out regular professional newsletters to partners on expert topics, current information, and good practices
- Develop cooperation (general and thematic) among biosphere reserves in Slovakia and in the neighbouring countries
 - o Strengthen networking and cooperation between domestic and neighbouring biosphere reserves
 - o Develop thematic cross-border cooperation within INTERREG cooperation programmes also beyond the framework of the INTERREG HUSK #biospherereserves project
- Increase networking and visibility at international level
 - o Formalise cooperation with WNBR, EuroMAB, UNESCO-designated sites, UNESCO Global Geoparks and other organisations of UNESCO science programmes
 - o Participate in events, professional programmes, and research networks of the UNESCO MAB Programme and EUROMAB
 - o Ensure the visibility of the PBR at other professional events and programmes (e.g. international events of national parks, thematic conferences)
 - o Build international partnerships and foster networking

Every summer, two UNESCO Biosphere Reserves – the Julian Alps and Miramare BR – organise together a summer camp for young people living in the area. The camps involve awareness-raising activities on topics such as sustainable development, the relationship between humans and nature, and biodiversity conservation. Participants are aged 15–18 and take part in various activities within the two Biosphere Reserves, such as hiking, cycling tours, rafting, and boat excursions. Source and further information: biosferaalpigiulie.it/en

- Enhance international cooperation between biosphere reserves (e.g. through the creation of joint transnational projects, networks) - establish at least one twinning or exchange programme with another
 - Prepare and implement joint research activities
 - Prepare and implement joint transnational projects with foreign biosphere reserve organisations (including knowledge transfer, exchange of experience, sharing good practices, pilot actions, research activities, species protection programmes, awareness-raising actions, and development of policy recommendations)
- Prepare annual progress reports against SDGs, KMGBF and Hangzhou targets

Good example: The Entlebuch Biosphere Reserve has developed a participatory and cooperation-based model around its management organisation. The model includes various independently organised forums, the “Friends of the Entlebuch Biosphere” Association, and the Cooperation Council, which ensures collaboration between different organisational units. It is further complemented by targeted public-private partnerships (e.g. Biosphäre Markt AG, Marketingpool Entlebuch, Energierama), biosphere partners, a brand committee, and strategic partnerships and networks, enabling the effective involvement and integration of key regional stakeholders. The so-called forums, supported by the biosphere management, ensure the involvement of economic and social actors. These include cultural, tourism, agricultural, forestry, education, and energy forums, which operate as associations bringing together individuals and civil organisations. The Cooperation Council serves as a platform where shared goals and activities are discussed and defined within a common vision. The “Friends of the Entlebuch Biosphere” Association supports various projects and initiatives based on its statutes, has established and awards an innovation prize, produces publications promoting the biosphere reserve, and organises events in the region. The association also has direct influence on the future of the biosphere reserve through representation on the board of directors. (Source and further information: *Euromab 1.10; Organisation | UNESCO Biosphäre Entlebuch; UNESCO Entlebuch BR Geschäfts- und Nachhaltigkeitsbericht 2024*)

5.2.3 Promoting research and sharing knowledge

5.2.3.1 Promote the use of the Poľana Biosphere Reserve as an educational site for a sustainable future

The aim of the measure is to enhance the role of the BR in environmental education and to widely communicate the values of the Protected Landscape Area Poľana and the Poľana Biosphere Reserve.

The strategy focuses this activity on awareness-raising and educational efforts by delivering environmental education, organizing outdoor learning activities, and promoting the BR’s values through media outreach. A key element in this regard is the Mobile Polana Programme focusing on thematic excursions within the Protected Landscape Area Poľana and the Poľana Biosphere Reserve.

Strengthening environmental education is a core part of the mission of biosphere reserves; therefore, this measure is fully in compliance with the objectives of the UNESCO MAB Programme.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to expand the educational programme and event portfolio of the BR, involve

residents, students, and professionals, as well as share educational content and information to raise general awareness about the BR and environmental consciousness and to directly support Hangzhou's education and ESD expectations:

- Strengthen cooperation with educational institutions by continuing and expanding the Mobile Poľana Programme
 - o Develop educational materials to support formal and informal education in kindergartens and schools (general and thematic)
 - o Organise professional training programmes for teachers
 - o Organise school-based and extracurricular educational activities and experiential learning programmes
 - o Organise summer camps with interactive programs combining environmental education, research activities and leisure program elements
 - o Create a brand (trademark) for environmental education schools of the BR
- Support initiatives of the youth
 - o Organise regional school competitions and announce calls for proposals for schools and kindergartens on the topic
 - o Provide professional support for
 - o Provide internship opportunities for university and college students, and support the preparation of theses and diploma projects
 - o Launch student research programmes (e.g. bird ringing, water quality monitoring, deadwood assessment)
 - o Develop the Young Nature Ranger Programme
- Expand environmental education among the public by providing information and organising events
 - o Develop general and thematic information materials for residents with educational content (in line with the principles of edutainment)
 - o Publish interactive tour guides and activity workbooks for individual hiking and excursions
 - o Organise public events (e.g. workshops, lectures, guided tours, open days, special ecotourism programmes, experiential activities)
 - o Organise summer universities for residents
 - o Organise regional study visits to showcase best practices and pilot projects (e.g. demonstration sites, community-based initiatives)
 - o Organise leisure programmes related to the topic (e.g. eco-excursions, handicraft workshops)
 - o Cooperate with tour guides, tour operators, and NGOs in environmental education and programmes
- Strengthen communication activities through national and regional media
- Strengthen and promote equality and inclusion as a cross-cutting principle across all activities, e.g.
 - o Promote non-discrimination in all activities and events
 - o Prioritise barrier-free venues and facilities for events and activities
 - o Develop ICT solutions for people with visual or hearing impairments

- Prepare special learning materials and workbooks for children with learning difficulties
- Provide inclusive programmes aimed at involving vulnerable groups
- Promoting intergenerational connections and cooperation

Good example: The Kogelsberg BR places strong emphasis on involving young people. For example, within the project From Source to Sea: Beating Plastic Pollution, 15 young people aged 13–18 living in the biosphere area were engaged to take joint action against marine plastic pollution, equipped with both theoretical and practical knowledge. The participants first received classroom-based training to understand the project concept, the interconnected natural systems, and their mutual impacts. This was followed by field practice, where the young nature rangers learned how to test water quality, measure stream discharge, and monitor and record key parameters (e.g. pH, iron, lead, nitrate, copper). In a subsequent event, the young nature rangers and their friends participated in a competition where they solved thematic puzzles related to the topic (45 students took part in the programme), and the top three teams received awards. Within the Environmental Month, the 15 participants collected data at designated sampling points and worked together with residents to gather information on threats to water quality. *Source and further information: kogelbergbiosphere.org.za, Learning through Place-Based Implementation of the UNESCO MAB Program in South Africa's Oldest Biosphere Reserve: A Case Study of the Kogelberg Biosphere Reserve (MDPI Article, Michael Klaver, Bianca Currie, James George Sekonya, Kaera Coetzer)*

Good example: Within the Young Egret Guardian Programme programme participating interns can gain insight into the practical aspects of nature conservation by working alongside a conservation ranger. The Fertő-Hanság National Park Directorate also joined to this initiative.

5.2.3.2 Build the regional identity of the Poľana Biosphere Reserve

The aim of the measure is to strengthen the regional identity of the BR in order to increase its visibility and raise awareness among the population, with a special focus on youth.

Although general awareness of the BR is relatively high among residents, its functions, mission, and responsibilities are still not fully understood. Visibility and understanding are even more limited among tourists. Therefore, greater emphasis should be placed on identity-building and on effectively communicating the role of the BR to support a harmonious relationship between humans and nature. Communication is also essential for increasing awareness of the BR's organisational background and governance structure, as the willingness of stakeholders to participate in and cooperate on related initiatives is currently considered weak.

The measure is in line with the expectations and objectives of the BR. It includes awareness-raising activities targeting residents to encourage more active community engagement and volunteering, particularly among young people. Enhancing the visibility of the BR among tourists also requires strengthened communication.

The measures defined by the Strategy include developing a mascot for the BR, as well as supporting and mentoring youth-led projects and initiatives in towns and municipalities within the Poľana Biosphere Reserve. The Communication Plan of the BR contains detailed tasks of branding and marketing communication, including

- Improving branding of the BR (e.g. creating a slogan, developing a mascot for the BR)
- Improving the official website for the Poľana BR
- Developing an interactive mobile application for exploring different BR areas, offering educational or game-based experiences (e.g., treasure hunt), maps, educational trails, accommodation and food options, tour guide / assistant etc.
- Expanding Poľana BR presence on social media platforms (Instagram, YouTube, etc.), involving residents (stakeholders) in content creation
- Increasing the number of information panels presenting the BR
- Strengthening cooperation with local and regional media
- Creating interactive interpretation tools, e.g. short brochures / promotional leaflets, word/audio, film, book, children's book, or comic about the history and significance of the BR in a regional context, including legends, stories, and fairy tales
- Creating and selling branded product portfolio (under the Poľana BR brand) and souvenir items
- Strengthening cooperation with event organisers to promote the BR as widely as possible
- Organising workshops and educational activities on all age groups of residents
- Involving stakeholders, e.g. organising competitions, voluntary actions, in-person discussions, thematic group meetings (e.g. with the youth)
- Disseminating project results, sharing information in a comprehensive way
- Establishing a biosphere reserve information centre for education, ticket sales, souvenirs, equipment rental, and technical support (e.g. for mobile apps)
- Allocating appropriate staff and financial resources for marketing and communication activities

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to strengthen Hangzhou's "transform consumption habits" target and develop local visibility of the BR:

- Improve visibility of the BR locally by placing information boards at the settlements of the BR that they are part of the biosphere reserve
- Develop a unified design of physical appearance elements, such as information tables, benches etc.
- Create a network of tourism information services in the area (information points presenting the values, attractions, and services of the BR)
- Launch a campaign on responsible consumption and sustainable lifestyles using local products, low-impact tourism and biodiversity-friendly everyday actions

Example: The municipality of Pilisborosjenő (HU, Pilis BR) has installed information boards at the entrances to the settlement, informing visitors that they are entering an area that is part of the Biosphere Reserve (BR). The Pilis BR aims to replicate this practice in other settlements within the reserve, thereby strengthening cohesion among the municipalities.

Good example: The **Biosphere Area Schwäbische Alb** cooperates with more than 100 partner companies, including gastronomic service providers, accommodation providers,

producers, educational centres, and processing facilities. The partnership is based on strict quality criteria, such as commitment to nature conservation, regional economic cycles, and guest service quality. Partners commit to high standards of quality, sustainability, and service, and are familiar with the natural and cultural values of the region. Hospitality providers mainly use local ingredients, thereby supporting the regional economy and supply chains.

“Biosphärengastgeber” partner network: Certified restaurants and hotels receive the “Biosphärengastgeber” label. These establishments offer typical regional dishes prepared from local ingredients and continuously inform guests about the values of the biosphere reserve. They also provide guest discounts for visitors arriving by public transport.

“ALBGEMACHT” local product brand: The “ALBGEMACHT” regional brand was established in 2018 within the biosphere reserve. Products under this brand are not only regionally sourced but also actively contribute to biodiversity and nature conservation. Through environmentally friendly farming methods, producers help maintain species-rich grasslands and agricultural landscapes. The motto of “ALBGEMACHT” — *providing habitat for animals and plants in the landscape* — expresses that consumers support landscape conservation and sustainable agriculture through their purchasing choices.

The brand can be used by producers and products that meet strict environmental, animal welfare, and transparency criteria (e.g. lentils, apple and quince products, cheeses, lamb). Key criteria include regional origin, production methods actively enhance biodiversity, animal welfare, avoidance of artificial additives and excessive processing, GMO-free, fairness, transparency. Products are sold directly by producers, as well as in organic shops, local supermarket chains (e.g. REWE regional outlets), and partner restaurants. The BR regularly updates its product list, presents local producers, and promotes farm visits. The brand website provides detailed information on producers and products and also offers gift packages made from local products.

Joint events: Cooperation among partners often includes joint promotion, themed dinners, gastronomic events, wine tastings, or rural hospitality events where visitors learn about product origins. The “Kulinarisches Biosphärengebiet” campaign promotes special local foods such as lentils, snails, and trout, as well as regional artisanal specialties. The annual “Biosphären-Woche” takes place in May, featuring 60–70 events including tours, cultural programmes, gastronomy events, and farmers’ markets.

Educational activities: The BR regularly organises network meetings and training sessions for partners. It also cooperates with kindergartens and schools, for example using organic products in school catering and joint action weeks.

Biosphärenbus shuttle service: A shuttle bus system operates in the region, connecting key attractions of the biosphere reserve and ensuring links with public transport (e.g. Münsingen–Traifingen–Biosphärenzentrum–Hopfenburg).

Biosphere Hosts: The Biosphere Hosts association was established by local hospitality providers. Member accommodation facilities offer guests regional specialties such as spelt, lentils, fruit juices from extensive orchards, and quality wines and spirits, combined in creative menus, or simply a relaxing stay in well-designed rural accommodations.

(Sources and further information: Források: <https://www.biosphaerengebiet-alb.de/>, <https://albgemacht.de/>)

5.2.3.3 Support open and citizen science, linking local knowledge with nature conservation and the sustainable use of landscapes

The measure supports projects and initiatives that promote the principles and application of citizen science.

A key task of biosphere reserves is to support projects and initiatives aimed at preserving the condition of the BRs and improving their status through broad cooperation, the effective use of available knowledge, and the active involvement of local communities.

Monitoring provides strong opportunities for public engagement through citizen science, where non-professionals contribute to data collection and observation. Involving residents can increase social impact, improve understanding of scientific results, strengthen acceptance of decisions, and enable the creation of more comprehensive datasets. In addition, documenting local ecological knowledge – built up over generations – can provide valuable complementary insights into human–nature interactions and traditional land-use practices.

Therefore, the measure supports the “preservation” function of biosphere reserves as it targets the protection and restoration of endangered species and habitats. With the monitoring efforts and citizen science approaches it is closely linked to the “research and education” function, as the UNESCO MAB Programme states that biosphere reserves should support scientific research and monitoring for nature conservation purposes, as well as promote education and awareness-raising activities.

This requires strengthening volunteer engagement and developing the necessary support systems (e.g. IT infrastructure, volunteer programmes).

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to improve monitoring activities with a strong citizen engagement focus:

- Implement monitoring and research projects by leveraging local knowledge
 - o Establish a research network involving regional universities, research institutes, and professional NGOs
 - o Explore traditional ecological knowledge with the involvement of local communities (e.g. through knowledge-sharing platforms and interviews)
 - o Create a citizen science volunteer network
 - o Collect and share local best practices
- Provide technical capacity for monitoring activities
 - o Install environmental monitoring equipment and measurement stations with shared data systems
 - o Install webcams (also for communication and awareness purposes)
 - o Develop digital tools (e.g. mobile applications) to support monitoring actions

- Expand community-based data collection and monitoring
 - o Create one integrated digital platform for citizen observations, IAS reporting, visitor monitoring, volunteer registration and data sharing
 - o Develop protocols for documenting local ecological knowledge through interviews, participatory mapping and farmer/forester knowledge panels
 - o Conduct population counts, species surveys, tagging, and mapping
 - o Enable individual and organized species observations with data reporting systems
 - o Map invasive species through reporting and data collection
 - o Operate waste reporting systems
- Introduce habitat protection and restoration measures in cooperation with schools, volunteers, tourists, and residents
 - o Deliver community projects involving volunteers, e.g. community park management – creation and maintenance of adaptive, biodiversity-friendly parks; community-based continuous cover forest management; community tree-planting initiatives; plant exchange programmes (e.g. for removing invasive species and replacing them with native ones)
 - o Organize training courses and workshops for residents (e.g. building insect hotels and bird feeders for children, biodiversity garden design, kitchen gardening etc.)
 - o Organize public forums, workshops, and participatory planning events
 - o Launch community competitions (e.g. “Most Biodiverse Garden” in the Poľana Biosphere Reserve)
 - o Launch student research programmes (e.g. bird ringing, water quality monitoring, deadwood assessment)
 - o Organize volunteer days involving students (with habitat restoration, waste collection, species monitoring, and other citizen science initiatives)
- Cooperate with conservation organizations and local communities to implement protection measures as part of everyday life and local economic activities
 - o Introduce monitoring projects for the protection of endangered species in close cooperation with the stakeholders
 - o Conduct visitor monitoring to explore visitor flows and visitation patterns
 - o Support municipal tree replacement programmes (assessment of invasive non-native species, recommendations for native species,

Good example: The Butterfly Conservation (UK) runs an annual programme called the Big Butterfly Count, launched in 2010. It is a nationwide citizen science survey designed to assess butterfly populations with the active involvement of residents, providing essential data for species conservation efforts. Registered participants observe and count butterflies and day-flying moths in a selected area during a defined period of the year, following a standard 15-minute methodology. Observations are recorded via a free mobile application, and results are displayed on an interactive map. In 2025, more than 125,000 people participated in the programme, recording over 2 million individual butterflies. (Source and further information: <https://butterfly-conservation.org/>)

preparation of professional guidance materials, coordination of regional programmes)

- Support the elimination, suppression of non-sustainable farming practices, such as the use of pesticides, planting of non-native tree species, dominance of monocultures and a loss of original floral biodiversity
- Support the introduction of sustainable forest management practices with developing integrated forest management, reducing the extent of plantation forests, and controlling invasive and non-native species

Good example: Since 2017, the Duna-Ipoly National Park Directorate and Pilis Park Forestry have conducted large-scale visitor monitoring research every year to better understand visitors and visitation patterns in the Pilis and Visegrád Mountains. The survey is unique in Hungary in terms of its complexity, scale, and regularity. Its monitoring character is ensured by the consistent methodology and the fixed network of counting points, allowing year-to-year comparability. Data collection includes visitor counts at designated locations (~40 points), recording time, group size, travel direction, observed activities, and transport modes, as well as mapping movement flows. In addition, questionnaire surveys are conducted both on-site (paper-based) and online. Within the *#biospherereserves* project, data collection has also been piloted in digital format using the TRIPOMETRIC application. The programme is implemented with the help of volunteers, and its success is reflected in growing participation: around 100 volunteers took part. Participants are supported with standardized clothing, free accommodation, and meals. Beyond data collection, the initiative also contributes to community building and strengthens the culture of volunteering. (*Source and further information: www.pilisibr.hu*)

5.2.3.4 Increase the participation of national and international scientific institutions and strengthen scientific cooperation in implementing the Man and the Biosphere Programme in the Poľana Biosphere Reserve

The measure aims to establish systematic cooperation between universities and scientific institutions in Slovakia and abroad.

The measure is in line with the goals and objectives of the UNESCO MAB Programme, fostering research activities and strengthening the scientific role of biosphere reserves.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to determine more concrete tasks and interventions which align with “Living in Harmony with Nature” research priorities:

- Establish a scientific advisory board and annual research agenda for Poľana BR
- Improve partnership-building and networking activities with national and international scientific institutions
 - Create a network of cooperating institutions
 - Develop long-term cooperation agreements and memoranda of understanding with partner institutions

- Establish a virtual advisory board composed of national and international scientific experts and institutions to facilitate regular knowledge exchange and consultations on emerging topics
- Promote interdisciplinary collaboration among research organisations, universities, and biosphere reserves
- Support the involvement of students, early-career researchers, and doctoral candidates in research activities related to biosphere reserves
- Strengthening presence and cooperation in the scientific sphere
 - Participate in scientific conferences, seminars, workshops, and professional events
 - Organise professional knowledge-sharing events (e.g. conferences, roundtable discussions, thematic workshops, and expert forums)
 - Promote the exchange of researchers, experts, and students through mobility programmes and study visits
- Prepare and implement scientific research and projects
 - Define interdisciplinary research topics relevant for the BR: biodiversity and livelihoods, grazing and habitat quality, climate resilience, visitor pressure, local products and sustainable consumption etc.
 - Facilitate joint research activities on scientific and environmental topics relevant to biosphere reserves
 - Initiate and implement joint national and international scientific projects (with exploring financing opportunities of EU research and innovation funds)
 - Strengthen data collection, monitoring, and sharing systems among participating institutions
 - Encourage the use of the biosphere reserve as a living laboratory for applied research, innovation, and sustainable development practices
- Disseminate scientific information
 - Develop scientific publications, policy papers, and research outputs
 - Develop digital platforms and databases for sharing research results, best practices, and scientific resources

5.2.3.5 Use innovative tools to facilitate stakeholder engagement

The aim of this measure is to facilitate stakeholder engagement in order to enhance knowledge sharing and ensure effective management of the BR. This will be achieved by building strong partnerships at regional, national, and international levels, and by actively involving local communities in project planning and implementation, particularly in the fields of nature conservation and sustainable development.

The proposed actions are in line with the mission of biosphere reserves, promoting enhanced cooperation and intersectoral dialogue. The tasks are well defined in the Communication Strategy of the Poľana Biosphere Reserve, which outlines a wide range of activities—from organising meetings, discussions, and field visits to developing online platforms and databases, as well as introducing a local ambassador programme and BR Poľana awards to encourage volunteering.

In line with the expectations of the Hangzhou Action Plan, the following measures are suggested to strengthen innovative approaches, support participatory governance, citizen action and local innovation, and to encourage positive incentives and recognise active contributors:

- Create collaborative platforms (e.g. a BR Lab or eco-innovation hub) where stakeholders can cooperate, co-design, and test solutions
- Expand the use of digital knowledge-sharing tools (e.g. webinars, matchmaking platforms) to connect stakeholders and facilitate knowledge exchange
- Improve participatory governance by strengthening the involvement of local communities in projects
- Enhance alternative financing models and methods (e.g. crowdfunding initiatives, engagement of companies through CSR programmes, sponsorships, or green impact bonds, micro-grants etc.)
- Launch micro-grant schemes for community initiatives, community biodiversity projects, schools, youth groups combined with mentoring support
- Introduce awards or labels (e.g. “BR Partner”, “Sustainable Business of the BR”) to recognise active contributors and encourage broader participation

Good example: the North Devon Biosphere Foundation in England and the UNESCO **North Devon Biosphere Reserve** “Pledge for Nature!” program combined volunteering with community crowdfunding. The aim of the program was to encourage community participation in protecting the local ecosystem. To launch the program, the Foundation initiated a crowdfunding campaign on the Crowdfunder UK platform. The goal was to create a financial base for starting and operating the program (including paying nature conservation experts, producing communication materials, developing educational content, and organizing school and community activities). The crowdfunding campaign was successful: more than £11,700 was raised from 196 supporters (meaning an average contribution of around £60 per donor). In addition, larger supporters were also involved, including companies, the County Council Environmental Group, the National Lottery Heritage Fund, and other organizations. After this, community participation was launched. Local stakeholders (residents, schools, businesses, producers) were invited to actively contribute to biodiversity protection through voluntary actions. Participants could register their commitments via an online form, specifying the type of activity, location, time required, and contact person. The submitted pledges were reviewed by Foundation staff and approved actions (within 48 hours) were displayed on an interactive map (“pledge map”), allowing transparent tracking of how many people were acting for nature and where. The program ran from spring 2020 for three and a half years. During this period, more than 1,300 pledges were made, involving over 5,000 participants, exceeding the original targets. Annual award ceremonies were held, recognizing the best community initiatives in different categories (schools, youth, communities). The program continued even after the campaign phase ended, meaning local stakeholders can still make commitments: currently, the system shows 727 pledges and 626 signed declarations. (Sources and further information: <https://www.northdevonbiosphere.org.uk/pledge-for-nature-project.html>)