Accelerating the Global Biodiversity Framework

by Strengthening Biosphere Reserves

A report and policy perspective for governments and parties to the Convention on Biological Diversity, and UNESCO Member States



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Abbreviations table

BR: Biosphere reserve
CBD: Convention on Biological Diversity
GBF: Global biodiversity framework
IPLC: Indigenous Peoples and Local Communities
MAB: Man and the Biosphere Programme
NBSAPs: National Biodiversity Strategies and Action Plans
OECM: Other effective area-based conservation measures
PA: Protected Area
UNESCO: United Nations Educational, Scientific and Cultural Organization
WNBR: World network of biosphere reserves

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Foreword

by the Director of the Division of Ecological and Earth Sciences, UNESCO

At this crucial moment for our planet, we must act with urgency, ambition, and creativity to stop biodiversity loss and ensure a sustainable future for everyone. The Kunming-Montreal Global Biodiversity Framework presents a bold vision: living in harmony with nature. Achieving this requires more than just commitments on paper—it demands fundamental change in how we live, govern, and work together.

Biosphere Reserves are powerful places where positive change is already taking place. They are home to more than 300 million people who are discovering ways to balance human well-being with the protection of ecosystems. They serve as sites where Indigenous Peoples, local communities, scientists, policymakers, and entrepreneurs unite to innovate, learn, and act. Additionally, they are connected through a global network that crosses borders and cultures, fostering exchange, solidarity, and hope.

This publication, 'Accelerating the Global Biodiversity Framework by Strengthening Biosphere Reserves', highlights how Biosphere Reserves can help achieve the GBF Targets. Biosphere Reserves provide solutions grounded in knowledge and practice, from restoring degraded ecosystems to creating sustainable economies and empowering communities to steward biodiversity.

UNESCO, through its Man and the Biosphere Programme, proudly supports these living laboratories of sustainability. We call on governments, partners, and citizens worldwide to recognise and invest in their potential. To succeed in protecting biodiversity and achieving the goals of the GBF, Biosphere Reserves will be vital allies—acting as links between people and nature and shining as beacons of a thriving, harmonious world.

António Abreu

Director of the Division of Ecological
and Earth Sciences, UNESCO

Key messages

This document highlights how the World Network of Biosphere Reserves (WNBR) of UNESCO's Man and the Biosphere (MAB) Programme can accelerate the implementation of the Global Biodiversity Framework (GBF). Biosphere reserves and the WNBR provide a platform for integrating biodiversity conservation with sustainable development helping advance all Targets of the GBF.

This report is aimed at providing governments and parties to the Convention on Biological Diversity (CBD), and UNESCO Member States, with key information on how biosphere reserves (BRs) can further the implementation of the GBF and its Targets. The summary for policymakers outlines the critical linkages between BRs and the GBF, and provides specific recommendations for policymakers to maximise the potential of BRs in achieving global biodiversity goals by 2030 and beyond. The full report synthesizes current evidence on the WNBR contributions to key targets and provides concrete examples from on the ground actions linked to each Target.

759 biosphere reserves

136 countries

25 transboundary sites

7.5 M square kilometers

300 M people

Biosphere reserves are areas of significance for biodiversity conservation that includes a gradation of human interventions. 90% of existing biosphere reserves are in Key Biodiversity Areas.

The WNBR strengthens biodiversity conservation through enhancing multi-actor participation in landscape-scale action across a network of learning places and people.

The WNBR can accelerate all targets by reducing threats to biodiversity (Targets 1-8), meeting people's needs through sustainable use and benefit-sharing (Targets 9-13) and providing tools for implementation and mainstreaming (Targets 14-23).

Governments and parties to the CBD can leverage local, national and international BR networks to foster knowledge exchange and mobilization and capacity building, increasing monitoring capabilities for all targets.

Governments and parties to the CBD can accelerate the GBF by integrating BRs into National Biodiversity Strategies and Action Plans and mobilizing resources to support, consolidate and expand WNBR initiatives.

PART A
Summary for policymakers



Biosphere reserves as sites for Global Biodiversity Framework Implementation

The UNESCO Man and Biosphere (MAB) Programme is an intergovernmental scientific programme that aims to enhance the relationships between humans and nature. It initiated the World Network of Biosphere Reserves (WNBR) in 1974. This network of living and thriving territories has more than 50 years of experience in learning how to implement a vision of living in harmony with nature. Since its formation, global MAB Strategies and action plans have aligned Biosphere Reserves (BRs) with global biodiversity and sustainability agendas, including the Global Biodiversity Framework (GBF) and the UN 2030 Agenda.
In 2025, there are 759 BRs in 136 countries, including 25 transboundary sites of international cooperation. The BRs cover over 7.5 million square kilometers, an area almost the size of Australia, and are home to over 300 million people. They engage these people, their institutions, governments and businesses in a balanced relationship with ecosystems and biodiversity. As such, they are key to accelerating implementation of all GBF targets.

What are biosphere reserves?

Biosphere reserves are physical territories, but also networks of actors working together in those territories. Biosphere reserves have three main functions of (1) Conservation of biodiversity and cultural diversity; (2) Economic development that is socio-culturally and environmentally sustainable; and (3) Logistic support through research, monitoring, education, indigenous and local knowledge production and training.
The *criteria* for BR selection and

World network for implementing the Global Biodiversity Framework

There is a World Network of 759 Biosphere Reserves



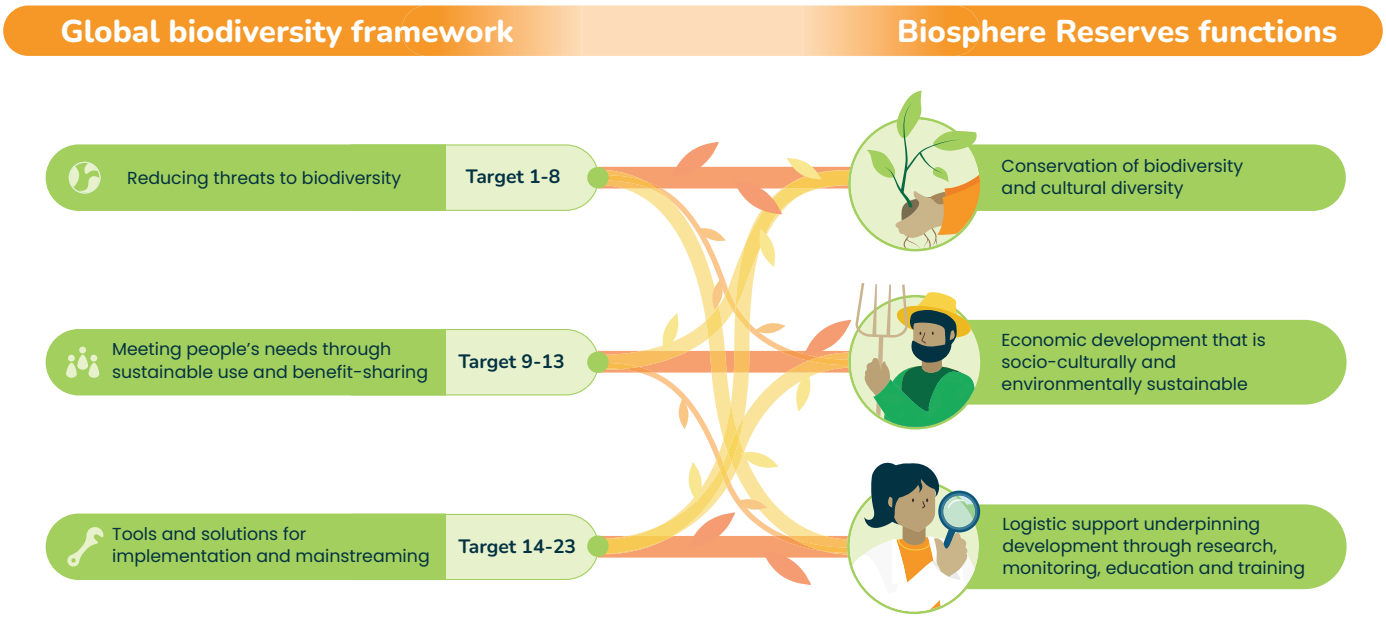
3 zones of the Biosphere Reserves

Transition areas
The transition area is where communities foster socio-culturally and ecologically sustainable economic and human activities.

Core areas
They comprise a protected zone that contributes to the conservation of landscapes, ecosystems, species and genetic variation

Buffer zones
They surround or adjoin the core area(s), and are used for activities compatible with sound ecological practices that can reinforce scientific research, monitoring, training and education.





evaluation, outlined in article 4 of the Statutory Framework of the World Network of Biosphere Reserves [1], states that each BR should be an area of significance for biodiversity conservation that includes a gradation of human interventions (a zonation system) to explore approaches to sustainable development. Each BR is allowed flexibility in setting its own goals and in developing implementation approaches. Biosphere reserves have been shown to catalyse local collaboration for sustainability and improve relationships between people and nature [2]. They can engage local governments, communities, Indigenous Peoples, universities, the private sector and non-governmental organizations in a participatory, inclusive approach to conservation at a landscape scale, across jurisdictions and boundaries [3] [4]. Evidence on this alignment and on achievements in BRs is provided in the Full Report (Part B).

How do biosphere reserves help implement the Global Biodiversity framework?

Biosphere reserves provide opportunities for local communities to experiment with sustainable development and conservation [5]. Experiences from BRs can help shape national policy and contribute to learning for GBF implementation across territories and designations. As unique institutional infrastructures all over the world, BRs are suitable places for monitoring and testing indicators for target follow-up within a global network to mobilise knowledge for impact.

Biosphere Reserves can be round table institutions which bring multiple actors to work together for conservation and sustainability in their territories. As such, BRs are well-positioned places to contribute to the GBF targets by providing innovative solutions that balance ecological integrity with human well-being. The GBF objectives of (1) working to reduce threats to biodiversity (Targets 1-8), (2) meeting people's needs through sustainable use and benefit-sharing (Targets 9-13) and (3) providing tools for implementation and mainstreaming of biodiversity (Targets 14-23) are aligned closely with the functions of BRs as set out in the Statutory Framework.

(1) The Statutory Framework of the World Network of Biosphere Reserves and the Lima Action Plan. UNESCO. « Lima Action Plan for UNESCO's Man and the Biosphere (MAB) Programme and its World Network of Biosphere Reserves (2016-2025) ». France: UNESCO, 2016. UNESCO - Electronic Archive. https://unesdoc.unesco.org/ark:/48223/pf0000381215.

(2) Schultz et al. (2018) Learning to live with social-ecological complexity. Global Environmental Change.

(3) UNESCO (2022), 'Technical Guidelines for Biosphere Reserves'.

(4) Barraclough, AD Måren IE (2022) The role of UNESCO biosphere reserves in the implementation of the Convention on Biological Diversity's post-2020 Global Biodiversity Framework: policy brief. UNESCO

(5) Barraclough et al. (2023). Global Knowledge–Action Networks at the Frontlines of Sustainability. People and Nature



TARGET 4

RECONCILING HUMAN ACTIVITIES WITH WILDLIFE IN KRISTIANSTADS VATTENRIKE, SWEDEN

The establishment of a multi-stakeholder coordination group in 1997 in the Kristianstads Vattenrike BR has reduced conflicts between farmers, visitors, and migratory birds such as cranes and geese. Group initiatives have reduced crop damage and greatly improved conditions for birdwatchers.



TARGET 5

CORAL REEF MANAGEMENT IN UTWE BIOSPHERE RESERVE, MICRONESIA

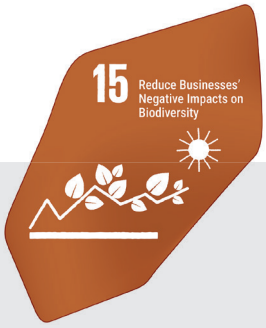
The community of Utwe, which manages the Utwe Biosphere Reserve in Kosrae, the Federated States of Micronesia, worked with UNESCO, scientists, local NGOs and government officials to identify and respond to a crown-of-thorns outbreak on their coral reef *(Acanthaster spp.)*. This species is a major threat to coral reef resilience and difficult to control. Combining traditional and scientific knowledge, the community not only safely culled the outbreak, but used it to fertilize their farms.



TARGET 9

RIVER TURTLE POPULATION RECOVERY WITH TSIMANE' INDIGENOUS PEOPLE IN BENI BIOSPHERE RESERVE, BOLIVIA

The yellow-spotted Amazon River Turtle *(Podocnemis unilis)* is under threat due to habitat change and use as a food source. The Tsimane' Indigenous People directly participate in a conservation and reproduction protocol of the turtle, helping to collect eggs annually and moving them to artificial beaches. This has helped increase the survival rate of the eggs, improving population outlook.



TARGET 15

TRANSITIONING TO A SUSTAINABLE LOCAL ECONOMY IN TIANMUSHAN-QINGLIANGFEN BIOSPHERE RESERVE, CHINA

Although local communities in the Tianmushan-Qingliangfen Biosphere Reserve shifted from mining to sustainable agricultural practices, the influx of millions of tourists presents economic opportunities and threats to the BR. E-commerce has enabled residents to sell local forest products like pecans and tea, particularly in the Bainu village, enhancing the local economy and encouraging youth to return home while promoting sustainable development that respects the BR's ecology.

Recommendations and ways forward

Concrete recommendations for national governments to accelerate the capacity of Biosphere Reserves (BRs) to be key sites for the mobilisation and implementation of the Global Biodiversity Framework (GBF) and its associated Targets:

1. Integrate BRs into Biodiversity Policies and Strategic Action Plans (BSAPs) at the local and national levels (Targets 1-8):

- Incorporate BRs into national biodiversity policies, including strategic action plans, recognising their unique role in biodiversity conservation and sustainable development.
- Support the participation of BRs in the development and implementation of local biodiversity strategic action plans (LBSAPs)

2. Support BR landscape-level initiatives that combine biodiversity conservation and sustainable use and recognize BR contributions to national biodiversity conservation goals (Targets 1-13).

- Support assessment of the conservation status of BRs through their periodic review process.
- Mobilize resources for the evaluation of biodiversity value of BRs.
- Include reports on BR effectiveness in GBF national reporting to the CBD.

3. Strengthen ties between BRs and national biodiversity, sustainable development and climate adaptation programmes (GBF Targets 1-8, 9-13 and 14).

- Use BRs as observatories of the climate, biodiversity and sustainability nexus.
- Ensure that climate change adaptation and mitigation strategies are integrated into the management plans of BRs.

4. Ensure Legal and Institutional Support for BRs (All Targets):

- Strengthen the legal and institutional frameworks that support BRs, ensuring they have authority, recognition, and effective governance structures.
- Clarify and update the policy status of BRs, including consideration of their status in the World Database of Protected Areas and as other effective area-based conservation measures (OECMs)
- Adapt and adjust BR implementation frameworks to ensure they are appropriate locally.

5. Foster robust partnerships and collaboration between governments, local communities, Indigenous Peoples, the private sector, and civil society to support BRs as hubs for GBF implementation (GBF Target 14).

- Strengthen ties between BRs and local and national governing authorities responsible for GBF implementation.
- Support dialogues between national MAB Committees and CBD focal points.
- Support MAB and WNBR participation in regional and sub-regional NBSAP dialogues



Seaflower © UNESCO/F. Rios


Econ landscape China © Unesco

- Recognise the key contribution of IPLCs and their existing initiatives to safeguarding sea- and landscapes.

6. Mobilise Resources for BRs (GBF Target 19).

- Allocate sufficient financial, human, and technical resources to support existing BRs and expand both numbers of BRs and their activities. This will consolidate current BR efforts and also foster future growth and innovation.

7.Support knowledge exchange, mobilisation and capacity-building, through regional and global knowledge exchange between BRs and the wider conservation community to share best practices and innovative biodiversity solutions (GBF Target 20).

- Support the participation of BRs in networks, exchanges and events with GBF stakeholders and implementers both nationally and internationally.
- Mobilise networks and resources for North-South, South-South, and South-North capacity building and training for implementing the GBF at a subnational level.

8. Build links for knowledge generation, conservation and accessibility with BRs and local institutions (GBF Target 21).

- Through existing WNBR and BR networks, mobilise Indigenous and local knowledges, research institutes, universities, especially those with UNESCO Chairs, and UNESCO Category II institutions, to develop and test nature-based solutions, conservation measures and initiatives to meet people's needs.

9. Activate GBF monitoring and evaluation in biosphere reserves (GBF Target 21).

- Consolidate research networks, monitoring and reporting infrastructures, supporting the capacity of BRs to track and report their effectiveness.
- Pilot test national GBF monitoring plans and implementation in BRs.
- Stimulate sharing of information for mutual learning, for example making all documents produced by and for BRs available on GBF knowledge platforms.
- Make available spatial data such as geographic borders of BRs and their zones.

10. Support meaningful participatory decision-making at all levels (GBF Target 22-23).

- Respecting free, prior informed consent, recognise and draw on local governance systems for BR nomination and management.
- Involve stakeholders and rights holders, including IPLCs, women and youth, in all stages of the BR nomination, decision-making, management and governance.
- Apply guidelines and recommendations for participation that comply with national and international standards (see, for example the UNESCO Policy on Engaging with Indigenous Peoples, article 8j of the CBD).

PART B
Full Evidence Synthesis* Report

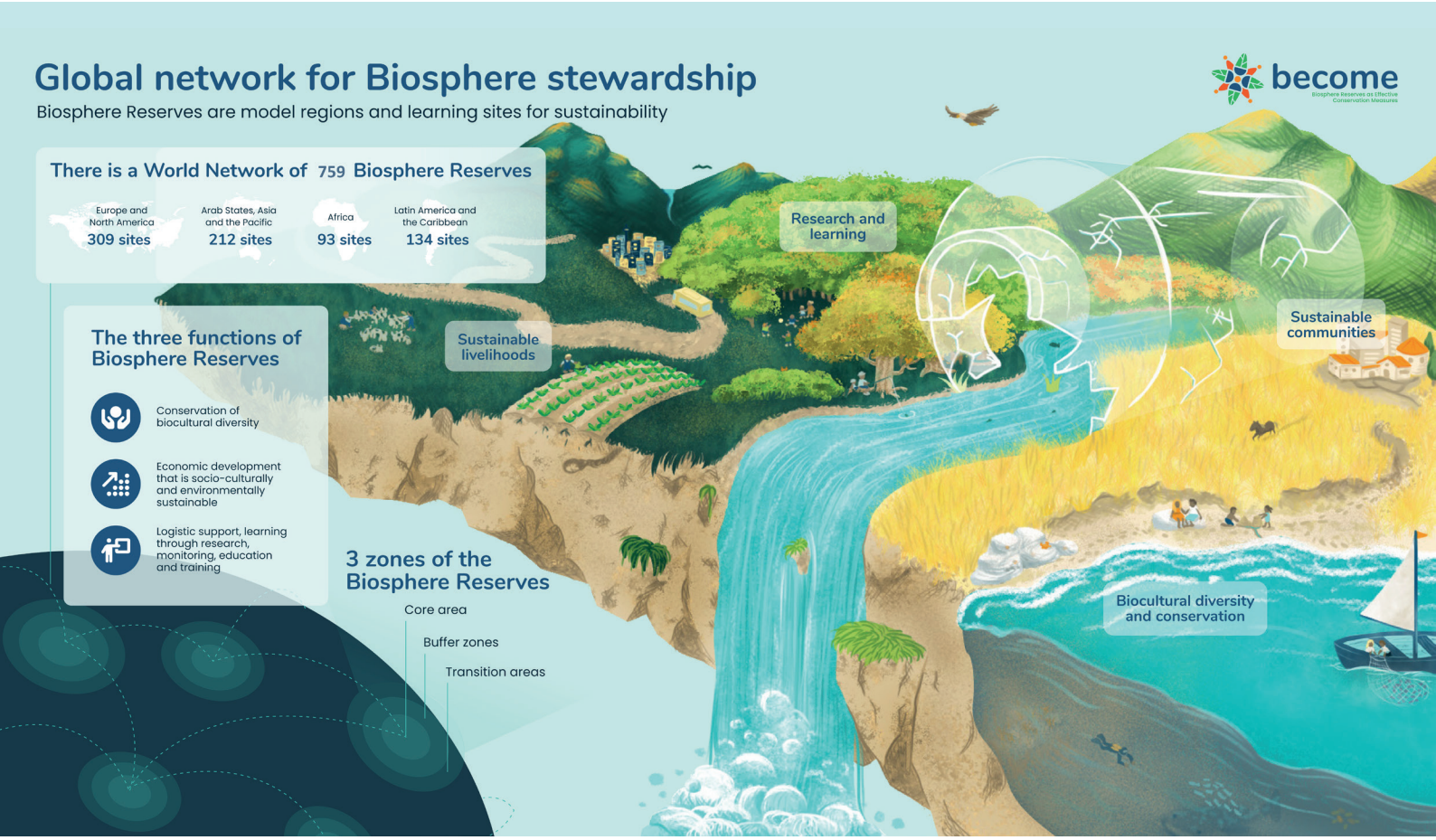

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** Methodological note: Evidence synthesis was carried out through consultation workshops and expert elicitation. Thematic links between Targets and Biosphere Reserves were assessed through scoping reviews of peer reviewed literature and technical reports.*

Introducing the World Network of Biosphere Reserves

Extraordinary environments all over the globe, where ecosystems and Indigenous peoples and local communities (IPLCs) have lived in harmony for centuries, are under threat. Biosphere Reserves (BRs), with their critical role in safeguarding and enhancing biocultural landscapes and seascapes, can contribute to maintaining their resilience and vitality. The World Network of Biosphere Reserves (WNBR) of UNESCO's Man and Biosphere Programme is a network of biosphere reserve sites, where people, governments and institutions can work to accelerate implementation of the Global Biodiversity Framework (GBF).

Biosphere reserves are "learning sites for sustainable development" that are nominated by governments and remain the sovereign territory of the country. They are internationally recognised within the framework of UNESCO's intergovernmental, scientific Man and Biosphere (MAB) Programme[6]. Biosphere reserves must have a management plan and a designated authority, and must be constituted of a mosaic of marine, terrestrial or freshwater ecosystems. Biosphere reserves should bring together local communities, decision-makers, research institutions and other partners working for a sustainable future in their region.



A *zonation system* in BRs should contribute to biodiversity conservation whilst supporting sustainable development and knowledge production. Their core areas must contain protected and conserved areas, wildlife reserves, or other effective area-based conservation measures (OECMs) such as Indigenous territories, community-managed conservation areas, Indigenous and Community Conserved Areas (ICCAs), or sacred sites. In their buffer zones and transition areas, BRs also include communities or other populated areas in the wider landscape, such as rural and urban land- and seascapes. Thus, they bring together actors at the landscape scale across jurisdictional boundaries. A *periodic review*, enables the evaluation of functioning, zoning, and scale of the BRS, as well as an opportunity to engage IPLCs, generate learning and update or adapt the management and activities of the BR.

Linking Biosphere Reserves to the Global Biodiversity Framework Targets

TARGET 1-8

Reducing threats to biodiversity

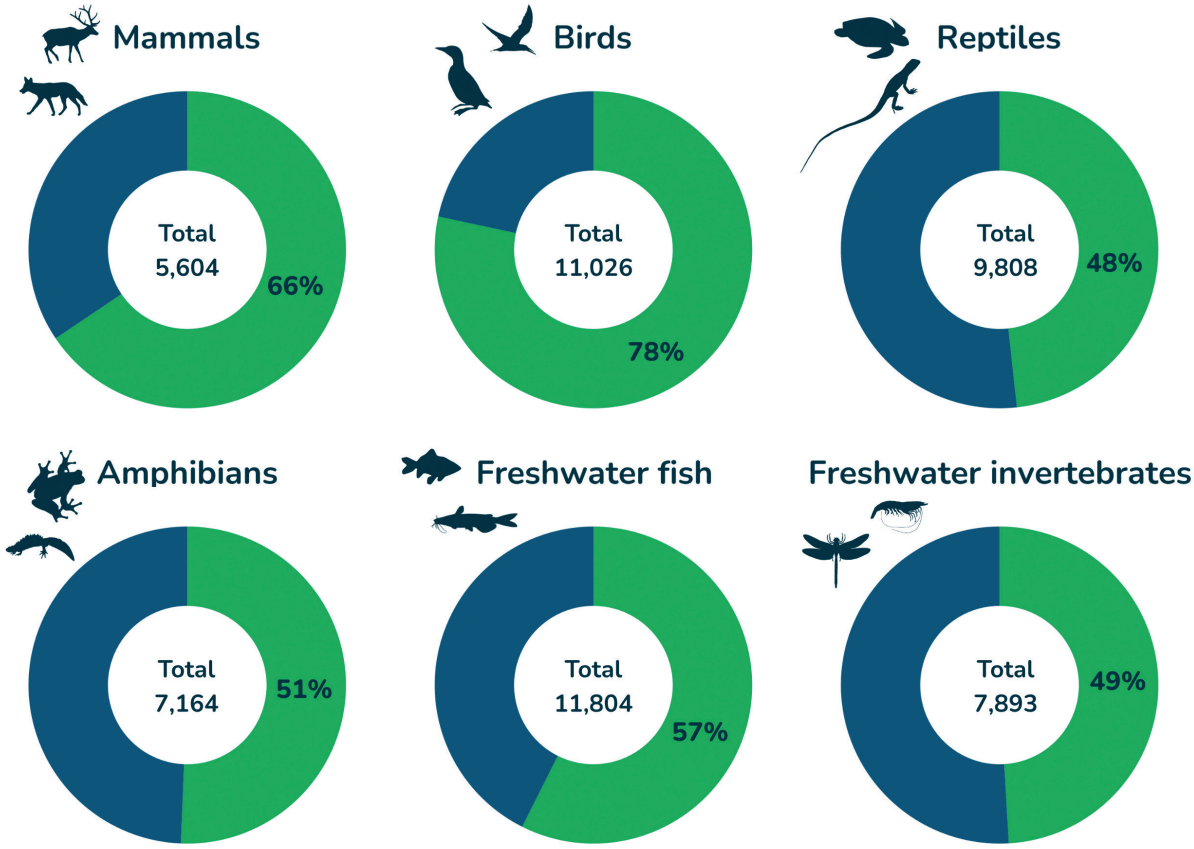
Background

From its inception, the WNBR has been defined as a tool for the conservation of biological diversity and sustainable use (Statutory Framework of Biosphere Reserves, article 2), linked directly to the objectives of the Convention on Biological Diversity. Biosphere reserves are intended as sites of excellence that contribute to the conservation of landscapes, ecosystems, species and genes. They should encompass a mosaic of ecosystems and be of significance for biological diversity conservation. Their zonation system supports a gradient of human intervention through a diverse toolbox of biodiversity safeguarding mechanisms to promote in-situ and ex-situ biodiversity conservation. These zones can support ecological connectivity, facilitate sustainable resource use and provide nature's contributions to local inhabitants and beyond[7]. As cross-scale and cross-sectoral projects, BRs can enhance the cooperation of all relevant actors across institutions and jurisdictions, activating landscape-level action to reduce threats to biodiversity loss and build resilience.

(6) Through provisions set out in the Statutory Framework of the World Network of Biosphere Reserves and the Lima Action Plan. UNESCO. « Lima Action Plan for UNESCO's Man and the Biosphere (MAB) Programme and its World Network of Biosphere Reserves (2016-2025) ». France: UNESCO, 2016. UNESCO - Electronic Archive. https://unesdoc.unesco.org/ark:/48223/pf0000381215.

(7) Palliwoda et al. (2021), 'Ecosystem Service Coproduction across the Zones of Biosphere Reserves in Europe'. Ecosystems and People. Vol. 17(1), 491-506

The percentage of species in different taxonomic groups in UNESCO biosphere reserves



Biosphere reserves potentially support 59% percent of all animal species[8]. This is a remarkable richness of biodiversity. Of the species groups assessed, birds and mammals are particularly species rich in BRs, supporting 78 and 66 percent of global species richness, respectively. Although plant species richness in difficult to estimate, a regional assessment across southern South America has shown that BRs are hotspots of plant species in the nightshade family[9].

Over 90% of assessed BRs coincide with a Key Biodiversity Area (KBA)[10]. These areas are extremely important for biodiversity by supporting populations of species classified as threatened by the IUCN. While core zones of BRs are also protected areas, the buffer zones and transition areas can serve to enhance the efficacy of the conservation of these KBAs and protect species. Biosphere reserves can bring extensive expertise and committed stakeholders to work for the survival of some of the planet's most at risk species in some of the world's most important habitats.

(8) Methodological note: Species richness was estimated by overlaying the polygons of biosphere reserves with species distribution maps from IUCN Red List for mammals, reptiles, amphibians, freshwater fish and freshwater invertebrates, and BirdLife International for birds. The total number of species within each group that overlapped with the biosphere reserve boundaries was then summed to estimate species richness in BRs. The estimates of species richness should be interpreted with caution because species distributions are mapped with some uncertainty and not all taxa are included in the IUCN database. The polygon data for biosphere reserves was generated from various sources including from directly from BR organisations, government databases, digitised from the UNESCO Biodiversity Portal and from sites classified as UNESCO-MAB Biosphere Reserves in the World Database of Protected Areas (WDPA). The data is calculated for 633 sites from which data was available, whereas the total network is 759 sites as of 2025. Data sources: IUCN (2024). The IUCN Red List of Threatened Species. Version 3.1. https://www.iucnredlist.org. Downloaded on 02/10/2024. BirdLife International and Handbook of the Birds of the World (2023) Bird species distribution maps of the world. Version 2023.1. Available at http://datazone.birdlife.org/species/requestdis. UNEP-WCMC and IUCN (2025), Protected Planet: The World Database on Protected Areas (WDPA) [On-line], February 2025, Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net.
It should also be noted that biodiversity richness estimates may vary depending on the dataset sources and taxonomic groups considered, and are likely to be refined in future assessments as species distribution data become more complete, updated, and taxonomic coverage expands.

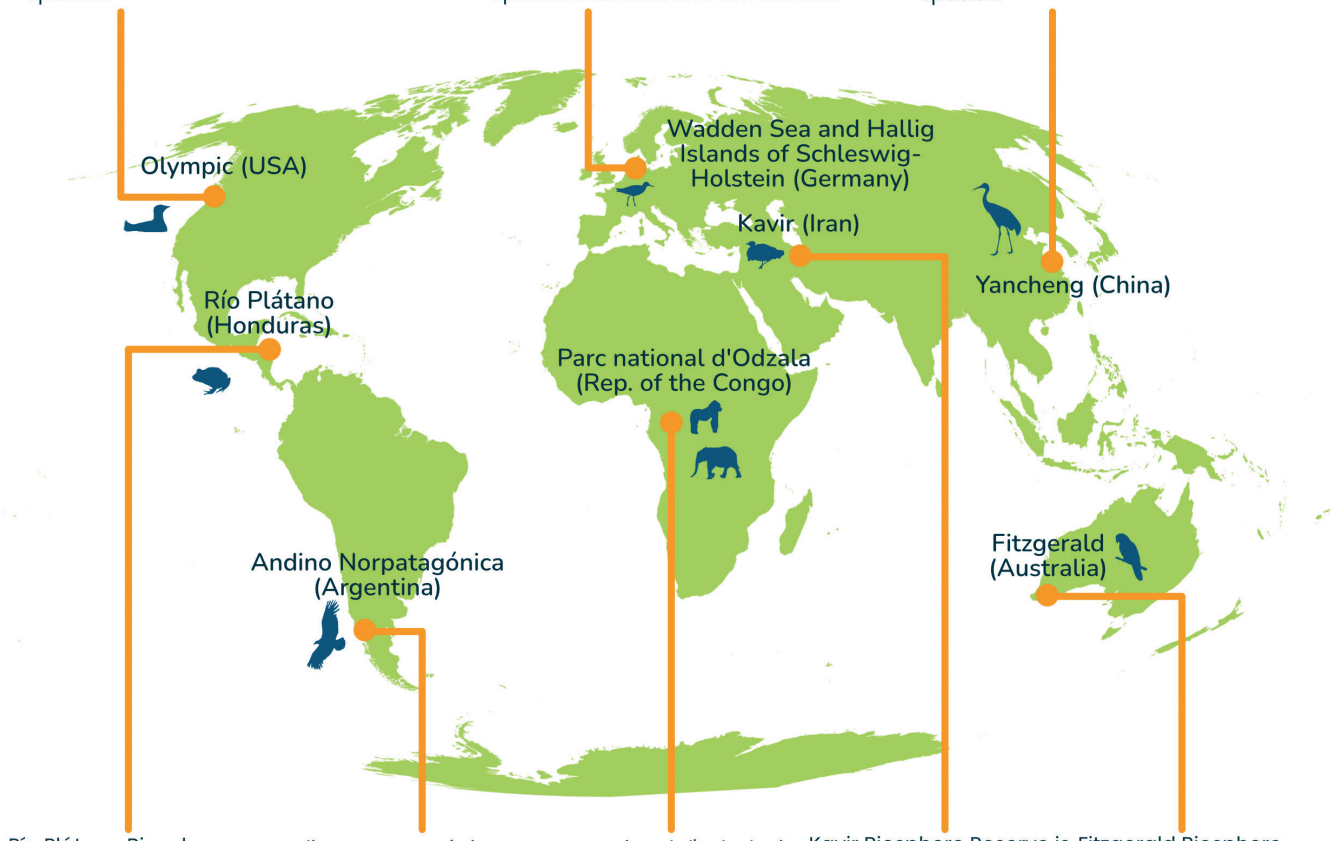
(9) Moreira-Muñoz, A., et al. (2022). Diversity and conservation gap analysis of the Solanaceae of southern South America. Frontiers in Plant Science, 13.

Over 90 percent of UNESCO Biosphere Reserves occur in Key Biodiversity Areas

Olympic Biosphere Reserve is an important site that supports a significant population of the endangered Marbled Murrelet, including breeding individuals crucial to the ongoing success of this species.

Wadden Sea and Hallig Islands of Schleswig-Holstein Biosphere Reserve has the highest numbers of birds in Europe and has significant breeding populations of multiple shore bird species that feed on the mudflats.

Yancheng Biosphere Reserve is a coastal site with extensive wetland systems. These areas are used by several threatened bird species including the Critically Endangered Siberian Crane and other iconic crane species.



Río Plátano Biosphere Reserve encompasses the whole watershed of the Río Plátano. This watershed supports the only known population of the Endangered frog *Craugastor pechorum*.

Andino Norpatagónica Biosphere Reserve supports a significant breeding population of Andean Condor which is classified as Endangered by IUCN. There are also large remnants of the last of the iconic Valdivian Forests of Argentina and Chile.

Parc national d'Odzala is both a National Park and a biosphere reserve. The area supports several iconic threatened large mammal species including Western Gorilla, Chimpanzee, and African Forest Elephants. The park also provides habitat for numerous other threatened species including birds, plants and reptiles.

Kavir Biosphere Reserve is a regional Key Biodiversity Area. The area is home to representative avifauna of Iran's central plateau and supports a significant breeding population of the threatened species *Chlamydotis undulata*.

Fitzgerald Biosphere Reserve is a key site for Short-billed Black-cockatoo and Western Bristlebird, both of which are endangered. There are also 125 nationally endemic species present in the Biosphere Reserve.

(10) Methodological note: The occurrence of KBA in BRs was identified by overlaying the polygons of all 759 BRs (MAB Secretariat polygon data, not public)with the polygons of KBAs. Data source: UNEP-WCMC and IUCN (2025), Protected Planet: The World Database on Protected Areas (WDPA) [On-line], February 2025, Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net. BirdLife International (2022). World Database of Key Biodiversity Areas. Developed by the KBA Partnership: BirdLife International, International Union for the Conservation of Nature, Amphibian Survival Alliance, Conservation International, Critical Ecosystem Partnership Fund, Global Environment Facility, Global Wildlife Conservation, NatureServe, Rainforest Trust, Royal Society for the Protection of Birds, Wildlife Conservation Society and World Wildlife Fund. March 2023 version. Available at http://keybiodiversityareas.org/kba-data/request. [Accessed 05/09/2023].

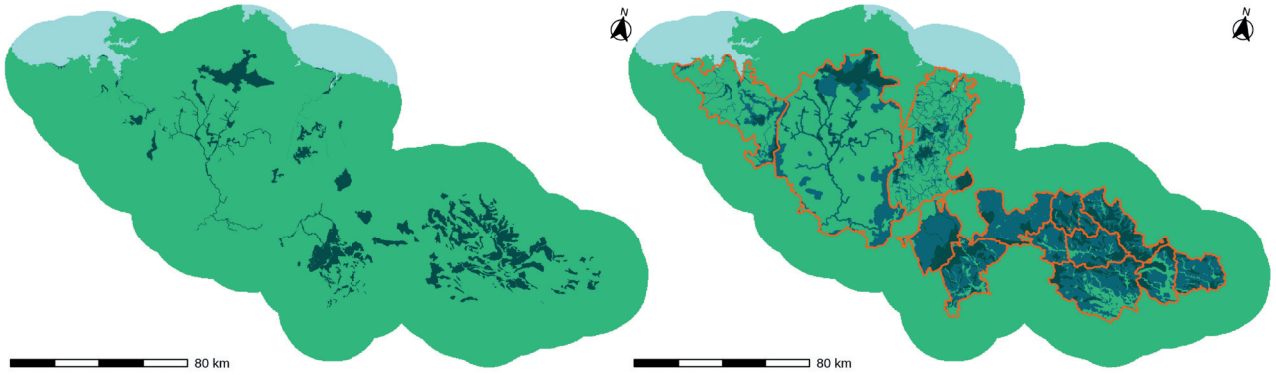


TARGET 1

Plan and Manage all Areas To Reduce Biodiversity Loss

Biosphere reserves can increase the connection among formally protected areas (i.e., core areas) in landscapes through the implementation of biodiversity-inclusive spatial planning. Rather than having spatially disconnected protected areas in a matrix of land that is not formally protected, the buffer zones and transition areas provide an opportunity to manage the landscape for spatial connection among the core areas. Such an opportunity can be realised to an even greater degree in the context of BRs as part of a network, especially where multiple BRs occur in close proximity, or directly adjacent to each other.

Biosphere Reserves can connect spatially disconnected protected areas with biodiversity-inclusive spatial planning



Location of the 13 biosphere reserves



Legend

Biosphere reserves	BR zone	Land use/land cover
Biosphere reserves	Core	Land
	Buffer	Ocean

Case study: Enhancing connectivity and implementing biodiversity inclusive spatial planning in Spain

Target	Target 1
Background	In northern Spain there is an area that contains 13 BRs that are spatially contiguous. Taken on their own, the protected core areas form a largely disconnected network of protected areas (left panel in the Figure). This general lack of connection among small patches limits the biodiversity conservation capacity of the protected areas.
Action	The contiguous network of BRs results in a more promising picture for effective biodiversity conservation by an increase in connectedness through biosphere reserves zones. This effectiveness is particularly evident in the eastern part of the network, where large swathes of land are connected within buffer zones of the BRs.
Relevant indicators	Other spatial management plans
Other targets addressed	Target 3



TARGET 2

Restore 30% of all Degraded Ecosystems

The United Nations Decade on Ecosystem Restoration (2021–2030) recognizes restoration projects in biosphere reserves as flagship initiatives for the decade's goals. Biosphere reserves' standing as landscape scale institutions places them in an ideal position for implementation of restoration initiatives under Target 2. The integrated landscape management facilitated by BRs can aid in prioritizing areas for restoration, enhancing landscape connectivity and the provision of ecosystem services across BR zones. In addition, social participation is fundamental in the success of restoration initiatives. Biosphere reserves' participatory approaches to land management can facilitate the identification and prioritisation of areas to restore, ensuring good ecological and social outcomes.



Case study: Restoring mangroves and implementing Nature-based solutions in the Caribbean

Target	Target 2
Background	Mangroves are some of the most precious ecosystems in the world, hosting invaluable biodiversity. In Latin America and the Caribbean, mangroves are also important for local communities' well-being and food security, including Afro-descendant communities and Indigenous peoples living in coastal BRs.
Action	The Government of Flanders and Spain's National Parks Autonomous Agency supported the UNESCO project "Mangrove restoration as a nature-based solution in biosphere reserves in Latin America and the Caribbean" (MangRes Project) (2022-2025). The project promoted participatory mangrove restoration and protection across seven biosphere reserves in Latin America and the Caribbean. In the Seaflower Biosphere Reserve, the project combined scientific assessments, traditional knowledge, and community-led planning to lay the foundation for the restoration of 53.12 hectares of mangroves, while also strengthening local capacities through education, training, and the promotion of sustainable livelihoods.
Relevant indicators	2.2 Area under restoration
Other targets addressed	Targets 4, 5, 9 and 11



TARGET 3

Conserve 30% of Land, Waters and Seas

Biosphere reserves can contribute to **Target 3** as they contain within their territories protected and conserved areas, wildlife reserves, or **other effective area-based conservation measures** (OECMs) such as Indigenous territories, community-managed conservation areas, Indigenous and Community Conserved Areas (ICCAs), or sacred sites. The Convention on Biological Diversity recognizes OECMs as a conservation designation for areas that are achieving effective in-situ conservation of biodiversity with associated ecosystem functions and services and where applicable, cultural, spiritual, socio–economic, and other values outside of protected areas.

Biosphere reserve core areas, which are typically designated protected areas, constitute ca. 18% of the total designated area worldwide.

The remaining **82% of BR areas are buffer areas and transition zones.** Where these areas do not overlap with protected areas, they can apply for OECM status, as they harbor activities compatible with **the conservation of biological and biocultural diversity.** Biosphere reserves have potential to increase their contributions to Target 3 of the GBF by meeting the criteria for identifying OECMs set out by the CBD (CBD Decision 14/8). The MAB International Coordination Council at its 33rd session in September 2021 adopted a decision that BRs should be considered as a whole entity; it is therefore the discretion of Member States to choose if they wish to apply for the designation of OECMs.


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Case study: Canada invests in biodiversity conservation in biosphere reserve buffer zones

Target

Target 3

Background

Canada has as of 2025 19 UNESCO-designated Biosphere Reserves, referred to as Biosphere Regions. All Regions are committed to balancing environmental, economic, cultural, and social needs to support local development.

Action

The Ministry of Environment and Climate Change and Parks Canada announced in 2022 that the Government of Canada would invest USD 11.3 million over three years under a project working with Canada's 19 UNESCO Biosphere Regions. During the project, partners work together to restore, maintain, and enhance biodiversity conservation in biosphere reserve's buffer zones across Canada. This will help further conservation work, supporting biodiversity research, documentation, and land management practices, stakeholder engagement and awareness. Through this project, the Canadian government hopes to achieve positive biodiversity outcomes in biosphere reserves' buffer zones equal to those of a protected area, and if they are successfully recognized as Other effective area-based conservation measures (OECMs), they could be counted towards Canada national's conservation goals.

Relevant indicators

2.2 Area Number of hectares of UNESCO designated sites (natural and mixed World Heritage sites and Biosphere Reserves) Protected area and OECM management effectiveness (MEPCA) indicator restoration.

Other targets addressed

Target 1



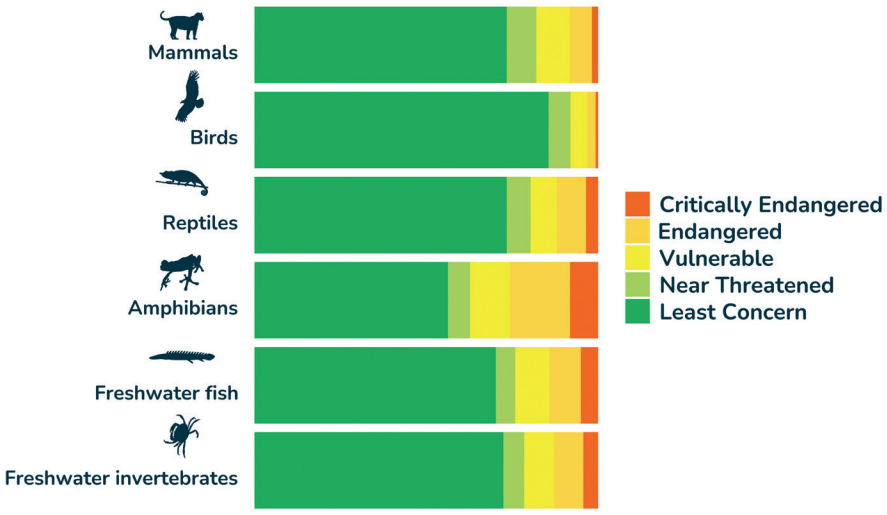
TARGET 4

Halt Species Extinction, Protect Genetic Diversity, and Manage Human-Wildlife Conflicts

Among the animal species that occur in BRs, **a significant number are categorised as threatened on the IUCN Red List**[11] – amounting to over 20 percent of all species assessed, including five percent Critically Endangered, nine percent Endangered and nine percent Vulnerable. A further six percent of species are Near Threatened. Of the species groups assessed, almost 40 percent of amphibian species in BRs are threatened. Recent research has highlighted the contributions of BRs to maintaining forest ecosystem functions, underscoring the potential significance of BRs to preserving endangered species[12].

Biosphere reserves can have an important role in the reduction of drivers of biodiversity loss. For example, land use change is the most significant threat to biodiversity globally[13]. Biosphere reserves can contribute to biodiversity protection by preventing the conversion of natural and semi-natural vegetation to intensive anthropogenic land uses and preventing deforestation[14]. Underlying drivers of land use change are diverse, but rates of land use change are expected to vary across the different zones of BRs. Evidence on the effectiveness of different zones in slowing or halting land use change is limited, but one study of Ecuadorian BRs found that land use change is more intense in transition areas and buffer zones than in core areas[15]. This could indicate that more attention should be given to the management of areas outside core areas if BRs are to effectively manage land use change.

The proportion of species in different IUCN categories* that occur in UNESCO Biosphere Reserves



*** Excluding species that are Not Evaluated, Data Deficient, Extinct or Extinct in the Wild**

(11) Methodological note: The proportion of species in different IUCN threat categories was assessed by calculating the proportion of species that were assessed by IUCN within each taxonomic group (i.e., mammals, reptiles, amphibians, freshwater fish, freshwater invertebrates and birds). The estimates also exclude species that were categorised as Data Deficient, Extinct or Extinct in the Wild. Data sources: IUCN (2024). The IUCN Red List of Threatened Species. Version 3.1. https://www.iucnredlist.org. Downloaded on 02/10/2024. BirdLife International and Handbook of the Birds of the World (2023) Bird species distribution maps of the world. Version 2023.1. Available at http://datazone.birdlife.org/species/requestdis. It should also be noted that biodiversity richness estimates may vary depending on the dataset sources and taxonomic groups considered, and are likely to be refined in future assessments as species distribution data become more complete, updated, and taxonomic coverage expand.

(12) Gohr, C. et al. (2025) Effectiveness of the world network of biosphere reserves in maintaining forest ecosystem functions. Commun Earth Environ 6 (83).

Case study: Halting species extinction in Camargue Biosphere Reserve, France

Target

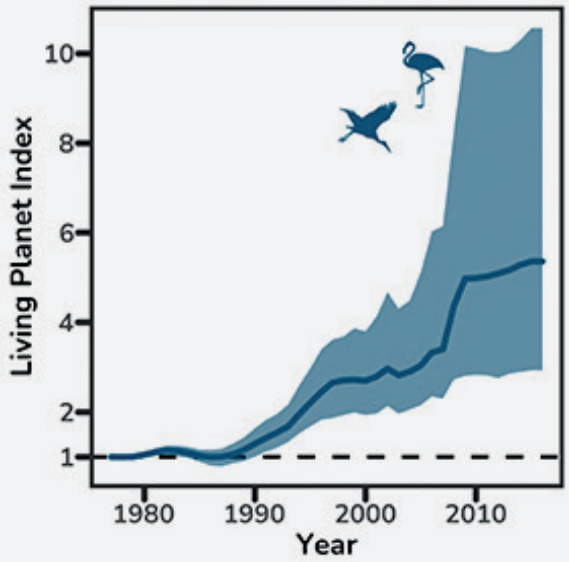
Target 4

Background

Camargue Biosphere Reserve encompasses the Rhône River Delta on the Mediterranean coast of France. The wetlands in the delta support significant populations of freshwater wading birds including iconic species like Greater Flamingo *(Phoenicopterus roseus)* and White Stork *(Ciconia ciconia)*. Camargue is among the first generation of BRs designated in 1977, a time when there was a strong focus on biological conservation in BRs.

Action

The effectiveness of Camargue in protecting and enhancing biological diversity is clearly evident in the average increase of vertebrate species populations in the BR since its designation in 1977[16].



Relevant indicators

Living Planet Index

Other targets addressed

Targets 1-8

(13) IPBES. (2019). Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services.

(14) Auliz-Ortiz, D. M., et al. (2022). Conservation of forest cover in Mesoamerican biosphere reserves is associated with the increase of local non-farm occupation. Perspectives in Ecology and Conservation, 20(3), 286-293.

(15) Urgilez-Clavijo, A., et al. (2024). Comprehensive framework for analysing the intensity of land use and land cover change in continental Ecuadorian BRs. Sustainability, 16(4), 1566.

(16) Methodological note: The trend in vertebrate populations was estimated using the Living Planet Index (LPI). This index is calculated from a database of repated measurements of population abundance for 5,570 species from 41,994 populations across with world. For Camargue BR there are records for 58 species from 69 populations of terrestrial and freshwater species available between 1977 (the year of designation) and 2016 (data after 2016 is sparse). Data source: LPI 2022. Living Planet Index database. 2022. < www.livingplanetindex.org/>. Downloaded on 18 August 2025.



TARGET 5

Ensure Sustainable, Safe and Legal Harvesting and Trade of Wild Species

Case study: Reducing poaching and encouraging community management in Dja Biosphere Reserve in Cameroon

Target

Target 5

Background

The Dja BR was established in 1981 in Cameroon, covering a dense evergreen forest inhabited by at least 40,000 people. With its 109 mammal species, 360 bird species, and 62 fish species, it is a hotspot for biodiversity. Poaching and deforestation have continually threatened Dja, a situation exacerbated by limited local employment opportunities.

Action

The creation of a space for consultation and discussion between different stakeholders in 2016 helped to reduce poaching in the Dja BR. In addition, with the help of the UNESCO Earth Network, a project supporting traditional craftsmanship and revitalization of cultural spaces, is creating sustainable alternatives for a thriving local economy.



Relevant indicators

Red List Index for used species
Living Planet Index for used species
Sustainable use of wild species
Illegal trade by CITES species classification

Other targets addressed

Target 9



TARGET 8

Minimize impacts of Climate Change on Biodiversity and build resilience

The UNESCO Man and Biosphere Strategy (2015-2025) had four strategic objectives: three that support the three core functions of Biosphere Reserves and a fourth to **"Support mitigation and adaptation to climate change and other aspects of global environmental change".** During these years, BRs around the world developed their capacities as observatories of climate change to support climate change observation, mitigation and adaptation. In September 2025, the MAB Member States will approve the new MAB Strategic Action Plan, which will continue to recognise that climate change is a top driver of biodiversity loss, as well as a threat to sustainable development around the world.


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Case study: Climate Change risk in biosphere reserves in Latin America and the Caribbean

Target

Target 8

Background

Recognizing that UNESCO-designated sites across Latin America and the Caribbean were wrestling with the impacts of climate change on their protected areas, communities and economies, UNESCO launched a platform to compile data, share knowledge and build capacity for enhanced and more effective climate action in UNESCO Global Geoparks and biosphere reserves across the region.

Action

In a study published in 2023, over 1 million km^2 home to more than 100 million people in nine countries were evaluated for climate risk. The study found that the risk of increased forest fires could be medium to high in all but one of the sites by 2040-59 if current trends continue. It also provided tailored recommendations for climate change adaptation to each site. For instance, in the Cacique Lempira Biosphere Reserve in Honduras, it provided a summary of evaluated risk to assist BR managers to prioritise adaptation actions and raise awareness with the Indigenous Peoples and local communities who call the BR home.

Relevant indicators

The Bioclimatic Ecosystem Resilience Index (BERI)
Proportion of local governments that adopt and implement local disaster risk reduction strategies in line with national disaster risk reduction strategies

Other targets addressed

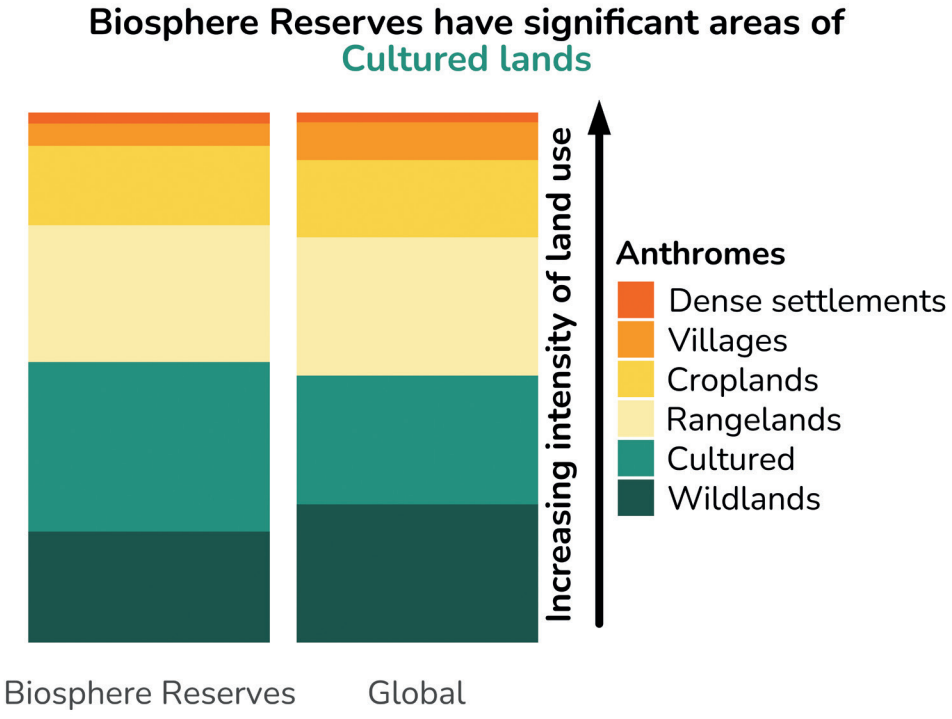
Targets 10, 11, 14, 20, 21, and 22

TARGET 9-13

Meeting people's needs through sustainable use and benefit-sharing

Background

Biosphere reserves are multi-purpose areas where the goal is to reconcile livelihoods and conservation goals through finding sustainable pathways. Biosphere reserves have proportionally more **low-intensity land use and cultured lands than the world in general** [16]. These areas with extensive and low-intensity land use support high biodiversity and are important places for meeting people's needs through sustainable use while supporting cultural land-use practices. With their special focus on the **interlinkages between cultural and biological diversity BRs are well placed for the conservation of biocultural diversity** [17] [18] whilst supporting local livelihoods [19].



(16) The area cover of different Anthromes (Ellis et al. 2021) was estimated globally and for all 759 BRs MAB Secretariat polygon data (not public). Data sources: UNEPWCMC and IUCN (2025), Protected Planet: The World Database on Protected Areas (WDPA) [On-line], February 2025, Cambridge, UK: UNEP-WCMC and IUCN. Available at: www.protectedplanet.net. Ellis, E. C. et al., (2021). People have shaped most of terrestrial nature for at least 12,000 years. Proceedings of the National Academy of Sciences, 118(17).

(17) Cusens, J., et al. (2022). Participatory mapping reveals biocultural and nature values in the shared landscape of a Nordic UNESCO Biosphere Reserve. People and Nature, 4 (2).

(18) Rollo, M. F. (2025). Interconnected Nature and People: Biosphere Reserves and the Power of Memory and Oral Histories as Biocultural Heritage for a Sustainable Future. Sustainability, 17(9).

(19) Yang et al. (2025). The livelihood-resource nexus in UNESCO biosphere reserves: A case study from Chebaling Biosphere Reserve in China, Journal for Nature Conservation, 84 ().



TARGET 9

Manage Wild Species Sustainably To Benefit People

The WNBR supports local and Indigenous community ownership, sustainable use of natural resources, and equitable benefit sharing, so that BRs are **excellent sites for implementing Target 9**[20]. Biosphere reserves may be considered as examples of **collaborative governance and management arrangements for the sustainable use** of wild species that meaningfully engage key actors[21]. The WNBR has prioritised establishing and strengthening BRs in areas with traditional lifestyles and Indigenous uses of biodiversity, with a focus on the links between community wellbeing and ecosystem health.

The emphasis of BRs on exploring socio-economic systems that positively affect biodiversity can help generate conditions for resource-based livelihoods that comply with sustainable harvesting regulatory requirements[22]. Research has highlighted the risks of imposing restrictions without meaningful community consultation and the importance of acknowledging **traditional ecological practices and customary systems**[23]**.** Successes and failures in BRs to integrate conservation areas with customary systems are important to learn from when implementing Target 9.


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Case study: Conservation and sustainable use of medicinal plants in the Vhembe BR South Africa

Target	Target 9
Background	A highly sought-after medicinal plant, Warburgia salutaris is now scarce in South Africa and listed on the IUCN Red List due to bark overharvesting. It is culturally important and used to treat various health issues in Indigenous communities of Southern Africa.
Action	In collaboration with local communities, traditional healers, the University of Venda, the Endangered Wildlife Trust and the South African government, the Vhembe BR has distributed over 5000 seedlings of *W. salutaris* to traditional healers and community members interested in planting and tending the trees. This initiative contributes to the conservation and sustainable use of medicinal plants to the benefit of local communities.
Relevant indicators	Benefits from the sustainable use of wild species Number of people using wild resources for energy, food or culture Red List Index
Other targets addressed	Target 5

(20) UNESCO, 'Biosphere Reserves: The Seville Strategy and the Statutory Framework of the World Network'.

(21) IPBES, 'Summary for Policymakers of the Thematic Assessment of the Sustainable Use of Wild Species of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES)'.(22) Rollo, M. F. (2025). Interconnected Nature and People: Biosphere Reserves and the Power of Memory and Oral Histories as Biocultural Heritage for a Sustainable Future. Sustainability, 17(9).

(22) Radachowsky et al., 'Forest Concessions in the Maya Biosphere Reserve, Guatemala'; IPBES, 'Summary for Policymakers of the Thematic Assessment of the Sustainable Use of Wild Species of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services'.

(23) Gonzalez-Duarte (2021) 'Butterflies, Organized Crime, and "Sad Trees"'. World Development 142



TARGET 10

Enhance Biodiversity and Sustainability in Agriculture, Aquaculture, Fisheries, and Forestry

Most BRs are situated in **food producing landscapes and/or seascapes**, often a feature of buffer zones and transition areas. Specific objectives for integrating conservation with sustainable agricultural and land-use practices, forestry, and fisheries make BRs **fertile implementation grounds for Target 10.** The WNBR directly supports GBF Target 10 by providing platforms for promoting sustainable agriculture and silviculture through integrated landscape management, conservation, and community engagement.

Several studies highlight the successful implementation of **sustainable agricultural and silviculture practices.** For instance, research about BRs in Ghana, Malawi, Benin, and South Africa suggests that sustainable agricultural projects, often combined with landscape governance and stakeholder participation, have simultaneously improved food security and conservation outcomes [24]. Such projects encourage the use of agroecological practices, soil restoration, and water conservation, fostering both biodiversity and sustainable livelihoods [25]. These examples underline the role of BRs as living laboratories for testing and scaling sustainable agriculture while maintaining biodiversity conservation and engaging local communities in decision-making processes.



Case study: Resilient agroforestry in Arganeraie Biosphere Reserve (Morocco)

Target	Target 10
Background	The Arganeraie Biosphere Reserve in Morocco is home to the iconic argan tree *(Sideroxylon spinosum)*, a vulnerable species central to local traditions and livelihoods. Climate change and rural exodus have led to land abandonment and the decline of sustainable agroforestry practices linked to the argan tree. The challenge is to restore resilience by reconnecting people with their land and knowledge, while tackling environmental degradation and economic vulnerability.
Action	To reverse the trend, the Arganeraie BR promoted a new model that blends science and the traditional knowledge of Noutfiya people. Key actions included planting 10,000 ha of argan trees, building 102 rainwater harvesting systems, and restoring ancestral practices like agdal. Now, with support from the PRIMA RES-MAB project, researchers and local communities co-develop bioeconomy solutions that strengthen livelihoods and protect ecosystems—ensuring a resilient future rooted in local identity.
Relevant indicators	Progress towards sustainable forest management
Other targets addressed	Target 5 and 9

(24) Hedden-Dunkhorst, Bettina, and Florian Schmitt (2020) «Exploring the Potential and Contribution of UNESCO Biosphere Reserves for Landscape Governance and Management in Africa» Land 9, no. 8: 237.

(25) Baldwin et al. (2023) Institutional support for building resilience within rural communities characterised by multifunctional land use. Land Use Policy, 132.



TARGET 11

Restore, Maintain and Enhance Nature's Contributions to People

Biosphere reserves are recognised explicitly as **sources and stewards** of Nature's Contributions to People (NCPs). A core objective of the MAB Strategy is to restore and enhance NCPs, aligning with **Target 11**. Various technical guidelines exist to support the managers and staff of BRs to assess and map the value of ecosystem services in their regions [26]. Studies in BRs establish context-specific knowledge and inform **knowledge-based actions to maintain and enhance NCPs** in practice [27], e.g., by fostering a participatory process for ecological restoration of mangroves in a Mexican BR [28]. Study results of a multi-site approach covering 137 European BRs indicate their potential to **balance natural and anthropogenic contributions** to NCP provision and co-production [29]. BRs have served as **bridging institutions** in NCPs research and management, facilitating dialogue and fostering transdisciplinary work to help bridge the science-practice gap and establishing knowledge-based actions to restore, maintain and enhance NCPs.



Case study: Payments for ecosystem services (PES) in Mae Sa-Kog Biosphere Reserve, Thailand

Target	Target 11
Background	The Mae Sa-Kog Ma Biosphere Reserve spans 57,366 hectares and serves as a vital hydrological resource while supporting diverse ethnic groups and wildlife. However, deforestation from poppy cultivation since the Vietnam War has depleted groundwater sources and disrupted local ecosystems.
Action	In partnership with Aura Water and USAID LEAF Programme, the Mae Sa-Kog BR launched a Payment for Ecosystem Service (PES) project in the Pong Krai village. This initiative, one of the first PES initiatives launched in Thailand, engaged local government, communities and the private sector to provide long-term care for fragile ecosystems. By earning income from conservation and restoration efforts, the Pong Krai Village reduced their dependence on the unsustainable practices that contribute to deforestation.
Relevant indicators	B.1 Services provided by ecosystems
Other targets addressed	Targets 10, 13 and 22

(26) Rochette et al. (2022). 'Guidance for the Assessment of Ecosystem Services in African BRs'; Vasseur and Siron (2019), 'Assessing Ecosystem Services in UNESCO Biosphere Reserves'.

(27) Thomsen, J.K., Måren, I.E. and Cusens, J., 2025.Applying the ecosystem services framework in UNESCO's World Network of Biosphere Reserves: lessons learned and ways forward. Current Opinion in Environmental Sustainability, 75, 101539. https://doi.org/10.1016/j.cosust.2025.101539

(28) Gómez-Ruiz et al. (2022). 'Fostering a Participatory Process for Ecological Restoration of Mangroves in Pantanos de Centla Biosphere Reserve (Tabasco, Mexico)'.

(29) Palliwoda et al. (2021). 'Ecosystem Service Coproduction across the Zones of Biosphere Reserves in Europe' Ecosystems and people.

TARGET 13-23

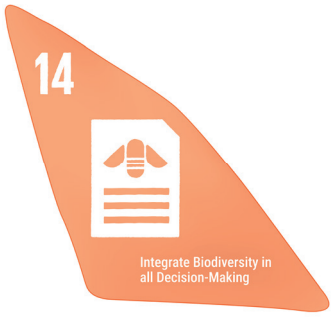
Tools and solutions for implementation

Background

Biosphere reserves have been implementing a holistic cross-sectoral approach to biodiversity conservation for decades. As **'learning sites'** for sustainable development, BRs are places where practices and knowledge can be tested, and environmental change monitored, and results shared, enhancing **evidence-based approaches** to biodiversity conservation and sustainability. As round table institutions, they can bring together actors across scales from local to national, and facilitate knowledge generation and mobilisation, thereby contributing to capacity building, knowledge cooperation, and access. They have been shown to bring people closer to nature, with a potential for catalysing positive change and innovation across sectors[30].



(30) CH Dabard, C Mann, B Martin-Lopez Biosphere Reserves as catalysts for sustainability transformations: five strategies to support place-based innovation. Current Opinion in Environmental Sustainability 73, 101508, 2025.



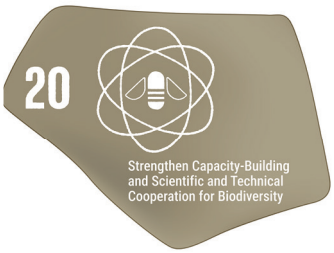
TARGET 14

Integrate Biodiversity in Decision-Making at Every Level

Achieving the ambitious targets of the GBF requires cross-scale and cross-sectoral **partnerships that extend beyond traditional conservation arenas.** This approach must mainstream biodiversity across all sectors of society, integrating it into policies and actions **beyond protected areas** and other area-based conservation measures. The World Network of Biosphere Reserves plays a central role in this ambition by enlisting the assistance of Indigenous Peoples and local communities, local, regional, and state authorities, the private sector, and researchers to boost conservation action for the broader realisation of the GBF.

Case study: Integrating biodiversity at all levels in French Biosphere Reserves

Target	Target 14
Background	Biosphere reserves can gather actors across all sectors together for a common vision for a more sustainable region. In France the eco-actors' commitment charter is offered to companies and associations that identify with UNESCO's values and wish to play a part in building a more sustainable future for their biosphere reserve
Action	Eco-actors make concrete, measurable commitments in terms of biodiversity, the environment and sustainable development. The aim is to contribute to the ecological transition in a positive way, by building on local initiatives and establishing networks of eco-actors committed to 'their' biosphere reserve.
Relevant indicators	-
Other targets addressed	Target 15



TARGET 20

Strengthen Capacity-Building, Technology Transfer, and Scientific and Technical Cooperation for Biodiversity

A central goal of the WNBR has been to support **cooperation**, scientific research and public education by engaging local citizens, managers, scientists, and Indigenous Peoples[31]. **Regional networks** of BRs have much experience with exploring partnerships between specific sites and research institutions, developing scientist–practitioner collaborations. Increasingly, the WNBR focuses on **knowledge co-production** and the weaving of diverse knowledges, including Indigenous and traditional knowledges. Strategy documents have recommended actions to grow interdisciplinary and transdisciplinary scientific networks and to develop shared research and knowledge exchange agendas.


© Camargue (delta du Rhône) BR

(31) Reed (2016). 'Conservation (In)Action: Renewing the Relevance of UNESCO Biosphere Reserves'; Bridgewater (2016). 'The Man and Biosphere Programme of UNESCO'.

Case study: Enhancing capacity for sustainability through a network across continents and sectors in the TRANSECTS project

Target

Target 20

Background

Members of the WNBR have a wealth of scientific and technical expertise and traditional knowledge which can be leveraged through cooperation. The network has generated arenas for the co-creation and/or exchange of knowledge, data, expertise, resources which can support Target 20. The TRANSdisciplinary Education Collaboration for Transformations in Sustainability (TRANSECTS) partnership funded, in part, by the Social Sciences and Humanities Research Council of Canada brings together collaborators from multiple countries who work with BRs in the Global South and North. Canada, South Africa, and Germany serve as hub countries in a cross-cultural collaboration to co-produce knowledge and build capacity for biodiversity enhancement, sustainable development, and transdisciplinary research.

Action

TRANSECTS is an international and intercultural transdisciplinary training partnership with representatives from academia, Indigenous and rural communities, UNESCO Biosphere Reserves, governing agencies, international networks, and private and civil society organizations and foundations. It builds sustainability science education, prepares graduates to be the next generation of sustainability change makers, and offers unparalleled opportunities for intercultural learning through shared international experiences and comparative analysis across the Global North and South. In collaboration with local Biosphere Reserves, Transdisciplinary International Learning Labs and Continuing Education opportunities offer training and knowledge sharing to all involved as well as generating cutting edge sustainability actionable knowledge.

Relevant indicators

Indicators for this target have not yet been identified.

Other targets addressed

Target 21



TARGET 21

Ensure That Knowledge Is Available and Accessible To Guide Biodiversity Action

Supporting knowledge generation and mobilization is a central pillar of the WNBR. Biosphere reserves aim to support scientific research and public education by engaging local citizens, managers, scientists, and Indigenous peoples. As "learning sites" for sustainable development they should be **places where practices can be "tested" and social and environmental change monitored.** While progress on these actions has been made, much work remains to support the WNBR, as well as improving data accessibility in the network.



Case study: Monitoring the State of the Bay in Georgian Bay Biosphere Reserve, Canada

Target

Target 21

Background

The Georgian Bay Mnidoo Gamii Biosphere was designated in 2004 for its ecological significance. Georgian Bay BR is known in Anishinaabemowin – the original language of the territory – as Mnidoo-gamii, Great Lake of the Spirit. The BR and its inhabitants work for a sustainable and equitable region.

Action

To help monitor the changes in Georgian Bay the BR and its many partner organizations launched the State of the Bay project. In the State of the Bay report, stories and knowledge from elders, knowledge holders and environmental scientists are brought together. Cultural advisors, including the Georgian Bay Anishinaabek Youth, help inform the process of 'braiding knowledges' or 'Seeing Both Sides' (Edwi-waabndamang). As a result, the stories shared are about appreciating the life and spirit of the place, as well as monitoring environmental and biodiversity changes. This work helps the local BR by deepening understanding of how people and the environment can better care for each other.

Relevant indicators

Species Status Index
Extent to which (i) global citizenship education and (ii) education for sustainable development, including gender equality and human rights, are mainstreamed at all levels in: (a) national education policies, (b) curricula, (c) teacher education and (d) student assessments

Other targets addressed

Target 20



TARGET 22

Ensure Participation in Decision-Making and Access to Justice and Information Related to Biodiversity for all

Biosphere reserves are valuable sources of **experience in participatory approaches to governance and management**, with a long history of trialling approaches to facilitate participation, benefit-sharing, and inclusive environmental governance across scales[32]. Biosphere reserve governance and decision-making structures are required to accommodate the participation of local communities, stakeholders, and rights holders (Statutory Framework Article 4.6). Meaningful participation, collaboration, and co-management regimes are key for successful governance in BRs and contribute to rules compliance, well-being, trust and place attachment, integration of conservation and social- and economic development functions, improvement of social outcomes, and facilitation of biodiversity conservation objectives[33][34]. By contrast, BRs with top-down management approaches tend to be less successful[35]. This experience provides opportunities for Member States to achieve the objectives of prioritising inclusivity, equity, and meaningful participation in biodiversity action, particularly for Indigenous and local communities and women[36].



Case study: Amazon Biosphere Reserves Project

Target	Target 22
Background	The Amazon Biosphere Reserves Project seeks to halt the degradation of forest areas, conserve biodiversity and ecosystems, and support alternative livelihoods for Indigenous Peoples and local communities.The Amazon BRs project connects eight BRs across four countries in South America. These BRs cover five percent of the Amazon basin and host more than 1.3 million people
Action	The project supports BRs to develop management plans with Indigenous Peoples and local communities, and facilitates the inclusion of youth in biosphere reserve management. It also supports local initiatives for the sustainable use of natural resources, including smallholder agroforestry with coffee and cocoa, native bamboo cultivation, and traditional weaving and fibre crafts.
Relevant indicators	Trends in the practice of traditional occupations
Other targets addressed	Target 9 and 23

(32) Schultz, L. et al (2011). Participation, Adaptive Co-management, and Management Performance in the World Network of Biosphere Reserves, World Development, 39 (4).

(33) Malmborg, et al. (2025) Leveraging place-based identities and senses of belonging to mobilize for action-oriented research in UNESCO sites, Current Opinion in Environmental Sustainability, 74.

(34) Schultz, L. et al (2018) Learning to live with social-ecological complexity: An interpretive analysis of learning in 11 UNESCO Biosphere Reserves, Global Environmental Change,50.

(35) Van Cuong, D., and Hockings (2017). 'Biosphere Reserves: Attributes for success'; Bouamrane et al. (2017). 'Community Participation and Adaptation to Change in Biosphere Reserves - A Review and a Mediterranean European Coastal Wetland Case Study.

(36) UNESCO (2022). 'Technical Guidelines for Biosphere Reserves'.



TARGET 23

Ensure Gender Equality and a Gender-Responsive Approach for Biodiversity Action

The MAB Programme recognizes a gender responsive approach, which aims to ensure the equitable and meaningful participation and leadership of women and girls in BRs. There is also a need to ensure an equal right and access to land and natural resources in line with UNESCO's Global Gender Equality Framework, particularly the work area to reinforce women's and girls' resilience and action for sustainable management of natural resources. As everywhere, BRs are confronting gender discrimination, including reduced participation of women and gender minorities in environmental decision-making, gender-pay gap, and increased vulnerability to violence. Rural and Indigenous women are particularly vulnerable to discrimination, which is why multiple initiatives in BRs have been specifically designed to facilitate their empowerment[37].

Biosphere reserves and their networks can **take positive action for Target 23 by integrating a gender perspective into their actions.** Through a participatory process, the Network of MAB Committees and Biosphere Reserves of Iberoamerica and the Caribbean (IberoMAB network) developed a guide for including a gender perspective in its governance and the governance of BRs throughout the region[38]. The guide provides thorough guidelines for the development of gender equality plans in BRs with a list of goals, actions and indicators. The report details how BR coordinating entities can evaluate gender equality in their BR, promote actions for social and cultural transformation of gender roles, support women's empowerment in decision-making, and fully integrate gender equality into BR management plans and activities.


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Case study: Women participation in conservation and water management in the Trifinio Fraternidad Biosphere Reserve (El Salvador, Guatemala, Honduras)

Target	Target 23
Background	The Trifinio-Fraternidad Transboundary Biosphere Reserve is located in and co-governed by El Salvador, Guatemala and Honduras. It includes key biodiversity areas, such as Montecristo National Park and a variety of forest ecosystems. In this area, water resources and biodiversity are interconnected and under pressure from droughts and deforestation.
Action	The Tri-national Commission of the Trifinio Plan promotes integrated water management and strengthens women's participation in governance. Women play a vital role in water user associations, leading actions to link sustainable water management and forest conservation. Policies that support training, technical assistance and funding for women empower them to manage both water resources and biodiversity, ensuring the resilience and well-being of their communities.
Relevant indicators	Percentage of positions in national and local institutions, including (a) the legislatures; (b) the public service; and (c) the judiciary, compared to national distributions, by sex, age, persons with disabilities and population groups
Other targets addressed	Target 22

(37) UNESCO in Action for Gender Equality 2023 UNESCO pg37-38

(38) Secretaría IberoMaB (ed.). 2022. Guía para Incluir la Perspectiva de Género en la Red IberoMaB 60 pp

An ever-evolving framework for a changing world: drawing lessons for beyond 2030

Biosphere Reserves: Experimental learning sites for transformative change beyond 2030

Biosphere Reserves (BRs) are designed to serve as experimental sites for sustainability, offering a diverse array of governance arrangements and providing valuable lessons for mainstreaming biodiversity in ways that resonate with local contexts [39]. By drawing on the rich biological and cultural diversity within BRs, these sites can inform national policies and offer insights into broader biodiversity conservation strategies that can leverage transformative change. These experiences not only support the achievement of the 2030 GBF targets but also contribute to the long-term vision of living in harmony with nature by 2050.

Strengthening Participation and Local Governance for the GBF

Lessons from BRs state the importance of starting from existing initiatives and involve stakeholders and rightsholders early in the decision-making process. This ensures that conservation activities are relevant and beneficial to participants while also fostering shared values among diverse interests. Past experience indicates that without sustained community participation and ownership, conservation efforts can falter, leading to exclusion or conflict [40]. Decentralising governance to the local level can lead to significant positive outcomes for both society and the environment [41].

Contributing to the the GBF Global Analysis and Global Review

A global analysis of national contributions towards the GBF is to be undertaken at every COP meeting until 2030, based on National Targets and NBSAPs. The global review of collective progress will be undertaken at COP17 and COP19. National governing authorities can include BRs in national reporting for the GBF Global Review by including BRs in NBSAPs and national reports. Additional national reports on BR effectiveness and case studies on GBF Target implementation in BRs can be an important source of information for the global report and global review of the GBF.

Onwards from the 5th World Congress of BRs of UNESCO in China in 2025.

The 5th World Congress of Biosphere Reserves (WCBR), held in China in 2025, marks a crucial moment for the MAB community. This congress provides an opportunity to review the progress and lessons of the past decade and to shape the new strategy of the MAB Programme. The new MAB Strategy "Hangzhou Strategic Action Plan for UNESCO's Man and the Biosphere (MAB) Programme and Its World Network of Biosphere Reserves for 2026–2035" is aligned with the GBF targets, addressing pressing global challenges such as biodiversity conservation, climate change, and post-2030 Sustainable Development Agenda. As the first WCBR held in the Asia-Pacific region, this event is critical for setting the course of the MAB Programme and WNBR beyond 2025.

(39) IPBES Transformative Change assessment, Chapter 4, How transformative change happens.

(40) Coetzer, Witkowski, and Erasmus (2014). 'Reviewing Biosphere Reserves Globally'; Gonzalez-Duarte (2021). 'Butterflies, Organized Crime, and "Sad Trees"'. Klaver et al. (2024). 'Learning through Place-Based Implementation of the UNESCO MAB Program in South Africa's Oldest BR'; Baldwin et al. (2023). 'Institutional Support for Building Resilience within Rural Communities'.

(41) Huber, J. M., Newig, J., Loos, J. (2023). Participation in protected area governance: A systematic case survey of the evidence on ecological and social outcomes, Journal of Environmental Management, 336. https://doi.org/10.1016/j.jenvman.2023.117593.


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