

## **Appendix 8.19**

# **UNESCO “Man and Biosphere” Programme FAQs**

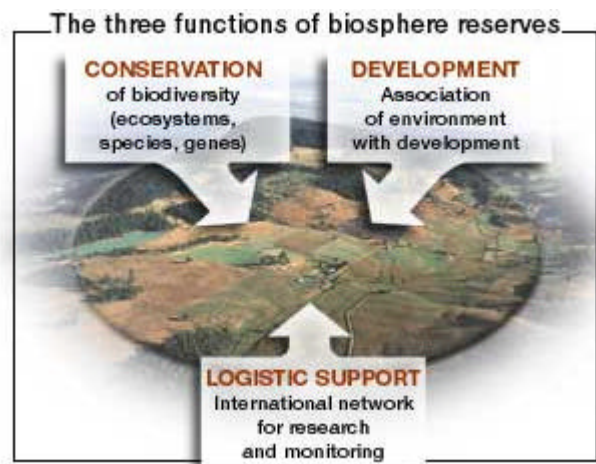
### **Frequently asked Questions on Biosphere reserves**

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## What is a Biosphere Reserve?

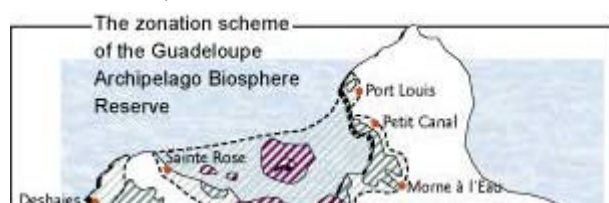
**B**iosphere Reserves are areas of terrestrial and coastal ecosystems promoting solutions to reconcile the conservation of biodiversity with its sustainable use. They are internationally recognized, nominated by national governments and remain under sovereign jurisdiction of the states where they are located. Biosphere reserves serve in some ways as 'living laboratories' for testing out and demonstrating integrated management of land, water and biodiversity. Each biosphere reserve is intended to fulfil three basic functions, which are complementary and mutually reinforcing:

- ▮ A conservation function - to contribute to the conservation of landscapes, ecosystems, species and genetic variation;
- ▮ A development function - to foster economic and human development which is socio-culturally and ecologically sustainable;
- ▮ A logistic function - to provide support for research, monitoring, education and information exchange related to local, national and global issues of conservation and development.



**B**iosphere Reserves are not covered by an international convention but must simply meet a set of criteria allowing them to fulfil properly their three functions. Collectively, biosphere reserves form a **World Network**. Within this network, exchanges of information, experience and personnel are promoted.

**B**iosphere reserves are organized into three interrelated zones, known as the **core area**, the **buffer zone** and the **transition area** and only the core area requires legal protection. A number of biosphere reserves simultaneously encompass areas protected under other systems (such as national parks or nature reserves) and other internationally recognized sites (such as **World Heritage** or **Ramsar wetland sites**).



## The origin of Biosphere Reserves

**B**iosphere Reserves are designed to meet one of the most challenging issues that the World is facing today: How can we conserve the diversity of plants, animals and micro-organisms which make up our living "biosphere" and maintain healthy natural systems while, at the same time, meet the material needs and aspirations of an increasing number of people? How can we reconcile conservation of natural resources with their sustainable use?



Biosphere reserves have been designed as tools for reconciling and integrating the conflicting interests and pressures that characterize land-use planning today. Coastal areas and islands are particularly prone to such conflicts due to the limited space and resources. The Boloma-Bijagos Biosphere Reserve in Guinea Bissau has been planned to reduce such conflicts by separating or allocating the various uses to different parts of the land and sea area.

Photo: Louis Brigand.

**T**he origin of Biosphere Reserves goes back to the "Biosphere Conference" organized by UNESCO in 1968, the first intergovernmental conference to seek to reconcile the conservation and use of natural resources, thereby foreshadowing the present-day notion of sustainable development. The early foundations of the Biosphere Reserve Concept derived from this conference. The aim was to establish terrestrial and coastal areas representing the main ecosystems of the planet in which genetic resources would be protected, and where research on ecosystems as well as monitoring and training work could be carried out for an intergovernmental programme called for by the Conference. This "Man and the Biosphere" (MAB) Programme was officially launched by UNESCO in 1970. One of the MAB projects consisted in establishing a coordinated world network of new protected areas, to be designated as "Biosphere Reserves", in reference to the programme itself.

**F**rom the outset, then, the primary concern of this MAB project was essentially a *scientific* one, with the designated areas consisting of *representative ecosystems* and the aim being to achieve the fullest possible *biogeographical cover* of the world, ensuring more systematic *conservation of biodiversity* than before. At the same time, biosphere reserves are more than just protected areas. Their conservation objective is all the better achieved in that it is supported by research, monitoring and training activities, on the one hand, and is pursued by involving systematically the cooperation and interests of the local populations concerned, on the other hand.

## Why do we need Biosphere Reserves?

**To conserve biological diversity.** Human pressures on land and water resources are drastically reducing the diversity of genes, plant and animal species, ecosystems and landscapes of the planet. This threatens human welfare, since this biodiversity is the potential source of foods, fibers, medicines, and raw material for industry and building. It constitutes an irreplaceable wealth for research, education and recreation for the whole of humankind. The core areas and buffer zones of biosphere reserves serve as repositories to safeguard samples of the biodiversity of the world's major biogeographical regions, and as reference and study sites to help improve our knowledge on biodiversity.



Photo: © Beatrice Petit.

Biosphere reserves conserve samples of the world's flora and fauna for the benefit of present and future generations. The flora of the Kogelberg Biosphere Reserve in South Africa is one of the most diverse and rare of its kind. More than 1600 plant species are estimated to occur here of which 150 taxa are considered to be locally endemic.

**To maintain healthy ecosystems.** Biosphere reserves, which may represent large areas of land and water, contribute significantly to the maintenance of the life support systems which serve to avoid soil erosion, maintain soil fertility, regulate river flow, recharge aquifers, recycle nutrients, and absorb air and water pollutants.



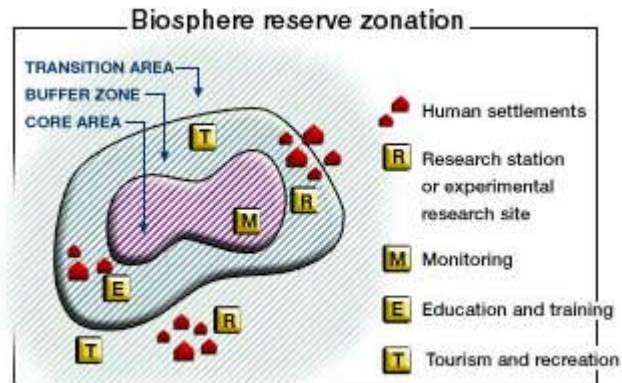
Photo: Roberto Linsker.

The Mata Atlantica Biosphere Reserve covers the remaining forested areas of the mountain range that runs parallel to a stretch of 3,000 km of the Atlantic coast of Brazil. One of the major benefits it provides is to ensure a regular and clean water supply for the many towns and cities on the coast, including the megacities of Rio de Janeiro and Sao Paulo.

**To learn about natural systems and how they are changing.** Research may be conducted on the structure and dynamics of the minimally disturbed natural systems of the core areas of biosphere reserves, and compared with the functioning of human-affected landscapes in the buffer and transition areas. Such studies, when carried out over the long term, show how these systems may be changing over time. Setting up similar long-term monitoring plots, and harmonizing methods and measurements allows comparison of results regionally and worldwide. The information thus obtained allows us to better understand global environmental changes. More information on research and monitoring can be found on the [BRIM pages](#).

## How are Biosphere Reserves organized?

**T**o carry out the complementary activities of nature conservation and use of natural resources, biosphere reserves are organized into three interrelated zones, known as the core area, the buffer zone and the transition area.



▶ **The core area** needs to be legally established and give long-term protection to the landscapes, ecosystems and species it contains. It should be sufficiently large to meet these conservation objectives. As nature is rarely uniform and as historical land-use constraints exist in many parts of the world, there may be several core areas in a single biosphere reserve to ensure a representative coverage of the mosaic of ecological systems. Normally, the core area is not subject to human activity, except research and monitoring and, as the case may be, to traditional extractive uses by local communities.

▶ **A buffer zone (or zones)** which is clearly delineated and which surrounds or is contiguous to the core area. Activities are organized here so that they do not hinder the conservation objectives of the core area but rather help to protect it, hence the idea of "buffering". It can be an area for experimental research, for example to discover ways to manage natural vegetation, croplands, forests, fisheries, to enhance high quality production while conserving natural processes and biodiversity, including soil resources, to the maximum extent possible. In a similar manner, experiments can be carried out in the buffer zone to explore how to rehabilitate degraded areas. It may accommodate education, training, tourism and recreation facilities.



## Who benefits from Biosphere Reserves?

**L**ocal communities. These range from local indigenous communities to rural societies, including country home owners. There are various potential benefits to such people, such as protection of basic land and water resources, a more stable and diverse economic base, additional employment, more influence in land-use decision-making, reduced conflict with protected area administrations and interest groups, a continued opportunity to maintain existing traditions and lifestyles, and a more healthy environment for these local communities and their children.

**F**armers, foresters, fishermen. Biosphere reserves provide access to training and demonstration projects on alternative land-uses and management strategies which maintain natural values, such as soil fertility and water quality, which make the best use of the available human and financial resources.



Farmers can benefit from biosphere reserves by participating in experimental research and projects to rehabilitate degraded ecosystems. Here in the Wadi Allaqi Biosphere Reserve in Egypt, the local people were consulted on what plants to cultivate in the buffer zone and transition areas where water is available. As a result experiments were set up to cultivate medicinal and fodder plants.

Photo: Irina Springuel.

**S**cientists. Biosphere reserves encourage research, for example on ecological processes or on biological diversity. They are areas offering a growing database on which to build new hypotheses and experiments. In addition, biosphere reserves provide long-term security for permanent plots and monitoring activities, which serve to identify longer-term trends over short-term fluctuations, as may be caused by changes in climate, etc. Biosphere reserves also allow for interdisciplinary research and monitoring comparative studies, and information exchange. They can thus encourage the allocation of national or international research funds.



Photo: Brian Craig.

Biosphere reserves are priority sites for setting up permanent plots and using standardized methodologies to better understand the dynamics of plant communities. The Smithsonian Institution biodiversity monitoring protocol is being used by many biosphere reserves, such as in Long Point Biosphere Reserve in Canada. Here, an added benefit is that school children take an active part in setting up and surveying these permanent plots, giving them invaluable practical experience for their future lives.

## How are Biosphere Reserves selected?

**B**iosphere reserves cover the great variety of natural areas of the biosphere, going from high mountains to greatly human-impacted plains, from coastal regions and islands to vast inland forests, from the deserts of the tropics to the tundra of the polar regions. To qualify for designation as a biosphere reserve, an area should normally:

- be representative of a major biogeographic region, including a gradation of human intervention in these systems;
- contain landscapes, ecosystems or animal and plant species, or varieties which need to be conserved;
- provide an opportunity to explore and demonstrate approaches to sustainable development within the larger region where they are located;
- be of an appropriate size to serve the three functions of biosphere reserves mentioned above;
- have an appropriate zoning system, with a legally constituted core area or areas, devoted to long-term protection; a clearly identified buffer zone or zones and an outer transition area.

**O**rganizational arrangements should be provided for the involvement and participation of a suitable range of public authorities, local communities and private interests in the planning and management of the biosphere reserve. In the case of large natural areas which straddle national boundaries, countries are encouraged to co-operate in setting up and jointly managing transboundary biosphere reserves.

**N**ational MAB Committees or focal points are responsible for preparing biosphere reserve nominations and for involving the appropriate government agencies, relevant institutions and local authorities in preparing the nomination. Each nomination is examined by a UNESCO Advisory Committee for biosphere reserves, for recommendation to the **International Co-ordinating Council of the MAB Programme**. This Council takes a decision on nominations for designation and the Director-General of UNESCO notifies the State concerned of the decision. Once designated, the appropriate authorities are encouraged to publicize their biosphere reserves, for example with a commemorative plaque and distributing information material indicating this special status.



## Who is participating?

**A**t the **site level**, biosphere reserves bring together many scientists, local officials, representatives of various national institutions and the local inhabitants.

**A**t the **national level**, biosphere reserves should form an integral part of national biodiversity plans for implementing the Convention on Biological Diversity, bringing together the institutions involved in nature conservation and in the sustainable use of natural resources.

**A**t the **international level**, many international governmental and non-governmental organizations are associated with the functioning of the World Network and the application of the concept at the field level. There are thus many projects to promote conservation and appropriate development in Biosphere Reserves, which are supported by the World Bank, the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), the Food and Agriculture Organisation of the United Nations (FAO), the World Conservation Union (IUCN), Conservation International and the World Wide Fund for Nature (WWF).

**B**iosphere Reserve **guiding texts** are available on the MABNet. In the **UNESCO MAB Biosphere Reserve Directory** you will find information on all the biosphere reserves. As of July 2003, 97 countries have established 440 biosphere reserves.





### Why a World Network?

**A**lthough biosphere reserves have very different geographical, economic and cultural contexts, they do have a common interest to seek concrete solutions to reconcile the conservation of biodiversity with the sustainable use of natural resources, for the benefit of local people. The World Network fosters exchanges amongst biosphere reserves - for example, research results or experience in resolving specific issues - and facilitates co-operative activities, including scientific research and monitoring, environmental education and specialist training. Co-operation can take the form of exchanges of information material, **articles in the international bulletin**, co-operative projects, twinning arrangements, swapping personnel, organizing visits, or correspondence by mail or electronic mail. The World Network is supported by **regional or sub-regional networks** such as in East Asia, or **thematic networks**, for example for studying biodiversity. The creation of new sub-networks such as these is encouraged.

**T**he World Network is formally constituted by a **Statutory Framework**, which resulted from the work of the International Conference on Biosphere Reserves, held in Seville (Spain), in March 1995. This Statutory Framework sets out "the rules of the game" of the World Network and foresees a periodic review of biosphere reserves. Activities of the World Network are guided by the "**Seville Strategy for Biosphere Reserves**", also drawn up at the Seville Conference. At present, not all existing biosphere reserves fully participate in the Network and these guiding documents will help to improve their functioning in the forthcoming years.