

## 1. BIODIVERSITY SCIENCE, RESEARCH AND MONITORING

UNESCO contributes to the scientific understanding of biodiversity, expanding the fundamental knowledge from genes to landscapes, applying new and traditional knowledge, building bridges between the natural and social sciences, bringing science into policy making.

<u>Research</u>	<u>Observing &amp; Monitoring Systems</u>	<u>Biodiversity and Climate Change</u>	<u>Science for Policy</u>
MAB Ecosystem Networks	Global Observing and monitoring Systems (GWSP,GTOS, GOOS, GCRMN)	UNESCO Intersectoral Platform on Climate Change	Intergovernmental Platform on Biodiversity and Ecosystem services (IPBES)
Ecohydrology Programme	Space technologies and biodiversity	Sustainable Management of Marginal Drylands (SUMAMAD)	UNESCO-SCOPE-UNEP Policy Briefs Series
DIVERSITAS	Biosphere Reserve Integrated Monitoring (BRIM)	Global Change in Mountain Regions (GLOCHAMORE)	Millennium Ecosystem Assessment (MA)
Mountain Research Initiative (MRI)	Global Change in Mountain Regions (GLOCHAMORE)	The ABC Initiative	MA Follow-up
Microbial Resource Centres (MIRCEN)	UNESCO-UNEP Regional Seas-CBD Partnership on Marine and Coastal Protected Areas (MCPA)	Climate Change and World Heritage	International Assessment of Agricultural Science and Technology for Development (IAASTD)
		<a href="#"><u>Coral bleaching working group</u></a>	
		Global Coral Reef Monitoring Network (GCRMN)	
		Global Ocean Ecosystem Dynamics (GLOBEC)	

## **1a) Research, Observing and Monitoring**

Through its intergovernmental and international scientific programmes, such as MAB, IHP, IGCP, IBSP and IOC, UNESCO promotes advances in research, participation of its Member States and scientists in international biodiversity monitoring programmes and global observing systems at all levels of biodiversity at different time and space scales.

- **MAB Ecosystem Networks** provide valuable insights into functioning and status of the world's most fragile ecosystems.
- **Biosphere Reserve Integrated Monitoring (BRIM)** encourages abiotic, biodiversity, socio-economic and integrated monitoring in the World Network of Biosphere Reserves.
- **Global Change in Mountain Regions (GLOCHAMORE)** is a world-wide network studying global change processes in mountains, using over 20 mountain biosphere reserves in all continents as monitoring and study sites.
- **Sustainable Management of Marginal Drylands (SUMAMAD)** focuses on monitoring, sustainable management and conservation of marginal drylands in Africa, Arab States, Asia, and Latin America.
- **Ecohydrology programme** is a scientific programme to understand and elucidate the dynamic relationships between hydrological, social and ecological systems and to seek new ways to balance human and environmental needs for water resources.
- **Space technologies** are used to monitor UNESCO's Natural heritage sites and biosphere reserves.
- **Diversitas** is an international research programme co-sponsored by UNESCO, which provides a platform for integrating scientific knowledge on biodiversity while promoting national research efforts critical aspects of biodiversity.
- **Mountain Research Initiative (MRI)** is a multidisciplinary scientific initiative supported by the MAB Programme which addresses global change issues in mountain regions around the world.
- **Microbial Resources Network (MIRCEN)** involves academic research centres in developed and developing countries that serve as repositories of microbial diversity and allow their proper management and safe use in research, industry and other fields.
- **UNESCO-UNEP Regional Seas-CBD Partnership on Marine and Coastal Protected Areas (MCPA)** is designed to coordinate information

related to marine and coastal protected areas in United Nations and other international processes.

- [Global Water System Project \(GWSP\)](#) seeks to answer the fundamental and multi-faceted question of human influence on the global water cycle.
- [Global Terrestrial Observing System \(GTOS\)](#) is a programme for observations, modelling, and analysis of terrestrial ecosystems to support sustainable development.
- [Global Ocean Observing Systems \(GOOS\)](#) is a permanent global system for observations, modelling and analysis of marine and ocean variables to support operational ocean services worldwide.
- [Global Coral Reef Monitoring Network \(GCRMN\)](#) aims to improve management and sustainable conservation of coral reefs for people by assessing the status and trends in the reefs and how people use and value the resources.

### **1.b) Biodiversity and climate change**

UNESCO's activities on the climate/biodiversity interface focus on those ecosystems that are particularly vulnerable to climate change. It uses its World Heritage sites and the World Network of Biosphere Reserves as tools to promote and share best practices and lessons learnt on climate change-biodiversity feedbacks.

- [UNESCO and Global Climate Change](#) The Intersectoral Platform for Action to Address Climate Change is tasked to oversee UNESCO's Strategy for Action on Climate Change.
- [Sustainable Management of Marginal Drylands \(SUMAMAD\)](#) focuses on studies sustainable management and conservation of marginal drylands in Africa, Arab States, Asia, and Latin America.
- [Global Change in Mountain Regions \(GLOCHAMORE\)](#) is a world-wide network to study global change processes in mountains using over 20 mountain biosphere reserves in all continents as monitoring and study sites.
- [The ABC \(Africa Bio-Carbon\) Initiative](#) seeks to develop strategies and models for bio-carbon sequestration projects in Africa by using the African Biosphere Reserves as platforms for demonstrating and sharing innovative sustainable practices.
- [Climate Change and World Heritage](#) studies focus on the nature and scale of the risks posed to World Heritage properties arising specifically from climate change with the aim of developing a strategy to assist States Parties to implement appropriate management responses.

- [Coral bleaching working group](#) UNESCO-IOC sponsors the coral bleaching working group of the Global Environment Facility (GEF) / World Bank Coral Reef Targeted Research and Capacity Building Project.
- [Global Coral Reef Monitoring Network \(GCRMN\)](#) aims to improve management and sustainable conservation of coral reefs by assessing the status and trends in the reefs and how people use and value the resources.
- [Global Ocean Ecosystem Dynamics \(GLOBEC\) Programme](#) coordinates international research to improve understanding of climate impacts on fisheries and to integrate ecosystem information into fisheries management.

### **1.c) Science for Policy**

Biodiversity is a complex area, and there are many scientific aspects of it that require further elucidation. Scientific information on biodiversity is important to help to build the basis on which to take informed policy decisions.

- [Intergovernmental Science Policy Platform on biodiversity and Ecosystem services \(IPBES\)](#) UNESCO is actively involved in the current discussions on the establishment of IPBES.
- [UNESCO-SCOPE-UNEP Policy Briefs Series](#) is intended to concretely and significantly impact on the capacity of UNESCO's Member States to rely on scientifically-sound information for the purpose of decision-making.
- [Millennium Ecosystem Assessment \(MA\)](#) UNESCO co-sponsored and contributed this most comprehensive assessment on the links between ecosystem changes and human well-being.
- **Millennium Ecosystem Assessment (MA) Follow-up** UNESCO is engaged in a MA follow-up exercise on identifying knowledge gaps identified by the MA and possible policy responses.
- [International Assessment of Agricultural Science and Technology for Development \(IAASTD\)](#) UNESCO co-sponsored and contributed to this assessment which evaluated the relevance, quality and effectiveness of agricultural knowledge, science, and technology.