



United Nations
Educational, Scientific and
Cultural Organization



Intergovernmental
Oceanographic
Commission



OCEAN

One planet, one ocean

THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION OF UNESCO PROMOTES INTERNATIONAL COOPERATION TO GENERATE KNOWLEDGE ABOUT THE NATURE AND RESOURCES OF THE OCEAN AND COASTAL AREAS AND TO APPLY THAT KNOWLEDGE TO IMPROVE MANAGEMENT, SUSTAINABLE DEVELOPMENT, MARINE ENVIRONMENTAL PROTECTION AND DECISION-MAKING PROCESS

Background and description

The ocean covers over 71% of the Earth, is vital in the regulation of our climate, and provides an extensive range of useful products and services to humanity including food, transport, energy resources and recreational activities. Only 1% of marine ecosystems are protected compared to 10% of terrestrial ecosystems. The importance of the ocean is not matched by our knowledge.

The Intergovernmental Oceanographic Commission (IOC) assists governments to address their individual and collective ocean and coastal management needs, through the sharing of knowledge, information and technology and through the co-ordination of programmes in ocean and coastal research, observations and services, and building capacity in the management of the marine environment.

The IOC is the only UN body specialized in ocean science and services. It provides a focus for other UN organizations and agencies with regard to ocean science, observations, data exchange, and services such as global tsunami warning systems. Established in 1960, the Commission celebrated its 50th anniversary in 2012 and currently has 145 Member States.

The IOC has a unique worldwide network of key marine scientists and research institutes. It is an important partner in the United Nations Secretary General's Oceans Compact, "Healthy Oceans for Prosperity", which was launched in Yeosu, Republic of Korea on 12 August 2012, during Expo 2012, *The Living Ocean and Coast*. From its inception, UNESCO through its IOC, has provided key contributions to the formulation of the Compact and is expected to play a key role in its implementation.

The Compact sets out a strategic vision for the UN system to deliver on its ocean-related mandates, consistent with the Rio+20 outcome document "The Future we Want" in a more coherent and effective manner. Three inter-related themes advance this goal: (i) Protecting people and improving the health of the ocean; (ii) Protecting, recovering and sustaining the ocean's environment and natural resources and restoring their full food production and livelihoods services; and (iii) Strengthening ocean knowledge and the management of the ocean. These objectives must be underpinned by a robust global ocean observation and knowledge infrastructure. Along with other UN entities, the IOC is playing a leading role in the implementation of the Oceans Compact.

HIGH LEVEL OBJECTIVES

IOC has four high level Objectives:

1. **Prevention and Reduction of the Impacts of Marine Hazards:** The IOC aids and advises policy makers and managers in the reduction of risks from tsunamis, storm surges, Harmful Algal Blooms (HABs) and other coastal hazards. After close to fifty years of experience coordinating the Pacific Tsunami Warning System (PTWS), IOC-UNESCO is leading a global effort to establish ocean-based tsunami warning systems as part of an overall multi-hazard disaster reduction strategy. The IOC Tsunami Unit works with Member States, together with other UN agencies and NGOs, to build sustainable tsunami early warning systems. In this context, the IOC coordinates and fosters the establishment of regional intergovernmental tsunami warning and mitigation systems in the Pacific and Indian Oceans, in the Caribbean, and in the North East Atlantic, the Mediterranean and connected seas;
2. **Mitigation of the Impacts of and Adaptation to Climate Change and Variability:** The IOC works with developed and developing countries to monitor and document climate change in order to aid in the design of adaptation and mitigation strategies. To do so, the IOC coordinates the Global Ocean Observing System (GOOS) which monitors the physical, chemical and biological aspects and changes in the world's ocean.



This unified network permits the design of adaptation and mitigation strategies and provides information and data for governments, industry, scientists and the general public. The direct results of human activities on the ocean and through climate change are causing the blue part of this blue planet to warm, rise, and lose oxygen. The IOC focuses on the impact of acidification from increasing CO₂ levels in the ocean, studies the prevalence of coral bleaching due to sea temperature rise, the changes occurring in marine biodiversity, and the proliferation of harmful algae along the coast. Assessing the extent of ocean changes is the first step in helping to determine which management decisions need action.

3. Safeguarding the Health of Ocean Ecosystems: The IOC is working to improve responses to the unprecedented environmental changes and human impacts now occurring and to promote ocean health via marine sciences. IOC-UNESCO supports the UN World Ocean Assessment, which is the regular process of reviewing the state of the marine environment, including socio-economic aspects. Keeping the world's ocean and seas under continuing review by integrating existing information from different disciplines will help to improve the responses from national governments and the international community to the unprecedented environmental changes now occurring. Monitoring and observing the global ocean requires an international effort and broad cooperation. The IOC manages the Global Ocean Observing System to provide a coordinated approach to deployment of observation technologies, rapid and universal dissemination of data flows and delivery of marine information to inform and aid marine management and decision makers and to increase the appreciation of the general public of our changeable ocean. The Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM) is an intergovernmental body of technical experts that provides a mechanism for international coordination of oceanographic and marine meteorological systems. JCOMM provides observing capabilities, data management, and services that combine the expertise, technology and capacity building capabilities of the meteorological and oceanographic communities.

4. Promoting Best Management Procedures and Policies Based on the Best Science: Marine ecosystem-based management requires a new generation of spatial planning tools to empower marine managers to implement best policies. Marine Spatial Planning is a public process of analyzing and allocating the spatial and temporal distribution of human activities in marine areas to achieve ecological, economic, and social objectives that have been specified through a political process. The International Oceanographic Data and Information Exchange programme (IODE) enhances the IOC marine research and management programmes by facilitating the exploitation, development, and exchange of oceanographic data and information among participating Member States. The IODE works to narrow the “digital

divide” by training marine information specialists and improving data system capacity in developing states, with an emphasis on Africa. The Ocean Biogeographic Information System (OBIS) coordinates and manages the global marine biodiversity knowledge base, which provides an integrated view on the past and current diversity, abundance and distribution of life in the oceans. Hundreds of institutions and scientists around the globe contribute to OBIS. The information portal holds data from bacteria to whales, from the equator to the poles and from the surface to the deepest ocean trenches and is used around the globe for planning ocean conservation policies, and identifying biodiversity hotspots and global trends in species distribution. In particular, OBIS contributes to 2 of the 20 UN biodiversity targets: sustainable management of our marine living resources, and the protection of at least 10% of coastal and marine areas by 2020. As such, it provides data for the identification of Ecologically or Biologically Significant Marine Areas as part of the Convention on Biological Diversity. OBIS is well placed to provide expertise, data and information for environmental and climate change impact studies as well as for global reporting and assessments on the state of marine biodiversity. OBIS is now hosted by the IOC Project Office for IODE in Oostende, Belgium.

➤ **Capacity Development:** The IOC develops leadership capacity, including fund-raising, team building, and decision-making skills for directors of marine and coastal sciences institutes to strengthen scientific, legal and institutional structures. Much regard is given to Africa as well as Small Island Developing States where livelihoods depend heavily on marine resources. The IOC Capacity Development programme is empowering developing countries to sustainably use their coastal and marine resources by encouraging ‘self-driven’ capacity-development. The risks of not immediately building relevant capacity in marine management and research will result in greater risk of destruction from ocean hazards, irreversible damage to ocean and coastal resources, and loss of sources of wealth for future generations. The rate of degradation and loss of life-sustaining ocean resources is accelerating, and one of the great challenges of this century is to develop capacity rapidly enough to protect and preserve these resources. The IOC’s “self-driven” capacity-building approach aims to reduce the continuous dependence on aid by empowering countries to address their own problems through science-based strategies.

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