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**The MAB Programme and the Oceans:  
Defining and developing an agenda including that of Ocean Biosphere Reserves**

**Background**

Since the adoption of the Jakarta Mandate on Marine and Coastal Biological Diversity at the second session of the Conference of the Parties to the Convention on Biological Diversity (CBD), in 1995, issues related to marine biodiversity have been high on the international agenda. In 2002, participants at the World Summit on Sustainable Development (WSSD), in Johannesburg, decided to set a representative network of marine protected areas (MPA) by 2012, which would cover 10% of the world ocean. Currently, it is estimated that less than one percent (1%) of the surface of the oceans is protected in the form of marine protected areas (MPAs) and other similarly-managed areas.

Indeed, in the marine environment, much progress still needs to be made so as to attain the WSSD target, especially in open and deep ocean environments. These areas, albeit perceived as being out of reach, are strongly impacted by human activities. A study published in 2006 jointly by the United Nations University and UNESCO showed that fishing, oil and gas exploitation, mining, shipping, marine scientific research, deep-sea cable industry and tourism are some among a whole host of human activities conducted in the oceans<sup>1</sup>. Some pressures on marine biodiversity, such as overfishing and marine pollution, are directly related to human activities. Human-induced climate change is also increasingly affecting the oceans, including the deep ocean, through ocean acidification, increase in the sea water temperature and changes in circulation patterns. The degradation of the physical environment and erosion and loss of biodiversity in the oceans have in some cases already determined an alteration of the ecosystem functioning and services that are provided by the marine environment and on which many world economies depend. The well-being of those that depend on the oceans, including its inhabitant species, and the development potential of oceans are directly linked to their sustainable management in the near as well as long-term future.

**Rationale for MAB's involvement**

The MAB Programme aims at reconciling the maintenance of biodiversity and ecosystem services with development. With its 40-year accumulated knowledge and experience, the Programme could greatly contribute to addressing some of the scientific issues facing the oceans, both in the fields of natural and social sciences. MAB can also facilitate multi-stakeholder dialogues on issues affecting the sustainable management of oceans and their biodiversity. The MAB Programme can provide useful conceptual and methodological frameworks as well as participatory tools to analyze and promote a sustainable cohabitation between humans and oceans.

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<sup>1</sup> M. Vierros, F. Douvère and S. Arico 2006. *Implementing the Ecosystem Approach in Open Ocean and Deep Sea Environments*. United Nations University Institute of Advanced Studies, Yokohama: 44p.

In the context of the World Network of Biosphere Reserve (WNBR), more than 30% of existing biosphere reserves (approximately 160 sites) encompass a marine or a coastal component. These sites are distributed along a gradient of different ecological, cultural and socioeconomic backgrounds in all regions of the world. They include ecosystems such as semi-enclosed marine systems, islands but also open and deep ocean systems. The challenges with which these sites are faced are often similar, notably, issues related to unsustainable fishing, marine pollution and impacts of climate change such as sea-level rise. Among those sites, almost two-thirds have been created in 2000 or before, therefore making available several years of experience in dealing with these issues.

During the Third World Congress on Biosphere Reserves in Madrid in February 2008, an informal group of managers from marine and coastal biosphere reserves gathered and deliberated that it would be valuable to strengthen the relations between biosphere reserves having an interest in the marine environment. They felt that the MAB Programme should further develop its marine element and suggested that specific actions with a clear marine focus be included in the context of the Madrid Action Plan (2008-2013). In 2009, the MAB ICC adopted the “Jeju Initiative”, which aims at setting a Global Network of Island and Coastal Biosphere Reserves. This network will concentrate its actions in the areas of climate change and sustainable development.

Though, open and deep ocean sea environments possess specific morphological, physical and ecological features such as current systems, seamounts and hydrothermal vents that make them different from other marine ecosystems, they are also used for human activities, some of which are characteristic of open and deep ocean environments. Illegal, unreported and unregulated (IUU) fishing, unsustainable fisheries in vulnerable areas such as seamounts, bioprospecting of genetic resources from the deep sea, cabling and related environmental effects, oil and gas operations, marine transportation – all these are human activities that find a specialized expression in the ocean environment.

While some specific ecosystems such as mountains and drylands, and more recently small islands and coastal areas, have already benefited from a special focus in the context of the MAB Programme, this has not yet been the case of the oceans. Based on the experience of the MAB Programme with solving issues at the nexus of humans with the biosphere, and taking into account the outcomes of discussions on the status, trends and drivers of loss of biodiversity in the world ocean that have taken place in the context of relevant fora<sup>2</sup>, it appears that the MAB approach could be further extended so as to also encompass the open and deep ocean. This development of the MAB Programme could also result into an evolution of site-based work and the establishment of Ocean Biosphere Reserves. In fact, even if they are not inhabited by residential communities, oceans are *de facto* used by humans, and some ocean areas could perform the same functions as current terrestrial and coastal biosphere reserves: conservation, research and development. Therefore, the MAB approach might be used to imagine solutions for an improved governance of marine areas in the open and deep ocean.

Finally, in developing a component dedicated to ocean issues, the MAB Programme would contribute to Strategic Objective 4 of the International Waters Focal Areas under the fifth cycle of the Global Environment Facility (2010-2014): “Support improved management of Marine Areas beyond National Jurisdiction”.

In developing and implementing an ocean component of its programme of work, the Secretariat of the MAB Programme would collaborate with the Intergovernmental Oceanographic Commission (IOC) of UNESCO. The ocean element of MAB would capitalize on past recent joint ‘oceanward’ efforts of MAB and IOC, namely the MAB-IOC Marine Spatial Planning

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<sup>2</sup> See the United Nations Informal Consultative Process on Oceans and the Law of the Sea (UNICPOLOS) and the United Nations Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biodiversity beyond areas of national jurisdiction.

initiative – an operational approach for implementing ecosystem-based management in the marine environment. MAB and IOC have also led the Global Open Ocean and Deep Seabed (GOODS) Biogeographic Classification project, which has resulted in the first-time ever production of comprehensive maps of open ocean and deep sea regions and provinces. Thus, a substantial oceanward reflection has already been carried out within the MAB Programme, which would greatly contribute to defining and developing a MAB agenda, including Ocean Biosphere Reserves.

In addition, in April 2010, IOC and MAB partnered with a number of regional networks of marine research stations in the launch of a World Association of Marine Stations (WAMS) and sites. This could help to develop collaborative activities between marine research stations participating in WAMS and marine sites that are part of the WNBR.

### **Propositions**

The MAB Council is invited to task the MAB Secretariat to explore modalities for and the contents of a MAB ocean agenda, including Ocean Biosphere Reserves. Practical initial steps would involve:

- To develop a full-fledged conceptual and methodological approach to Oceans & the MAB Programme in the form of a working document to be tabled at the next session of the MAB Bureau;
- To explore further partnerships and possible synergies with other structures in addition to IOC, UNDOALOS, IUCN, UNEP, WHC and current partners of MAB in ocean-related issues; and
- To encourage marine and coastal biosphere reserves to participate actively in the definition of an agenda on Oceans & the MAB Programme, including coordination and synergy-development with the Jeju Initiative.