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**ADAPTATION TO CLIMATE CHANGE ON OCEANS  
AND COASTS IN AFRICA AND SMALL ISLAND DEVELOPING STATES**

Summary. The potential role of IOC in mainstreaming adaptation to climate change in oceans and coasts lies on IOC's longstanding contribution on ocean and climate sciences, decision-support tools and planning rooted in the principles of the IOC Capacity Development Self-driven Strategy.

The Cancun Framework for Adaptation (1/CP16, UNFCCC) challenges the ways several UN institutions collaborate with countries by deciding to assist countries at sub-national and national levels. Now, IOC reaches a cross road, where it is asked to assist countries by transferring its global and regional scientific facilities into promoting concrete local and sub-national long-term adaptation actions for building resilience.

To better assist its Member States (MS) in adaptation, IOC initiated the accreditation process of UNESCO as a Multilateral Implementing Entity of the Adaptation Fund and partnered the 50th IOC Anniversary Fellowship with their African countries' representatives on a mentorship process to select national priorities on coastal adaptation (Nairobi Workshop, November 2010). Participants concluded that adaptation is a major institutional challenge, requiring new ways of tailored assistance and human resources with different profiles.

The achievement of the *Millennium Development Goals* (MDG) in coastal countries, especially poverty eradication, is under threat due to the insufficient awareness of the climate change impacts beyond emergency and reactive measures (IPCC 2009) and low awareness that oceans are also being affected by climate change.

Recognizing the importance of collectively addressing the long-term challenges of climate change including adaptation, the Conference of the Parties 16 (COP16) of UNFCCC and the Meeting of the Parties to the Kyoto Protocol (KP CMP 6) stated that adaptation must be addressed with long-term action and support, with the same priority as mitigation. The COP16 adopted the Cancun Adaptation Framework, which is the most comprehensive package ever agreed by Governments to implement long-term adaptation actions. This Framework invites parties to enhance action, including on oceans and coasts, by undertaking, *inter alia*: (a) planning, prioritizing and implementing adaptation actions, including actions at national and sub-national levels; (b) impact, vulnerability and adaptation assessments, including assessments of financial needs and economic, social and environmental evaluation of adaptation options; and (c) strengthening institutional capacities and enabling environments for adaptation, including climate-resilient development and vulnerability reduction (Art.14 of 1/CP.16 of the UNFCCC).

Countries are increasingly requesting IOC's assistance in the domain of coastal adaptation for building resilience of coastal communities and their environments. The assistance requests include addressing coastal zone management, coastal erosion, the use of seasonal forecasts for planning economic activities and access to funding mechanisms (e.g. the Adaptation Fund). In an effort to better serve its Member States, the IOC initiated, in late 2010, the accreditation process of UNESCO to serve the Adaptation Fund Board as a Multilateral Implementing Entity (MIE). This process is being carried out in collaboration with the UNESCO Intersectoral Platform for Action in Climate Change, led by IOC.

During 2010, the IOC focused its very limited human and financial resources for mainstreaming its principles of capacity development in building upon previous actions in raising awareness on long-term adaptation to climate change in Africa and SIDS. These synergies have been built around the multiple activities and initiatives towards adaptation to climate change in place at IOC and UNESCO and upon requests by Member States.

IOC, in collaboration with the Government of Kenya, organized a workshop for Eastern and Western African countries on ways to have access to the Adaptation Fund (AF) and priorities that have to be addressed in coastal adaptation (Nairobi, 3–5 November 2010). The workshop partnered nine national Designated Authorities (or GEF national coordinators) for the AF from Gambia, Gabon, Ghana, Kenya, Madagascar, Morocco, Nigeria, Senegal and Tanzania with the awardees of the 50th Anniversary IOC Fellowship to work on drafting concept projects on adaptation to climate change with the requirements of the AF project format. The discussions on ways to have access to the AF and on developing project proposals was facilitated with the technical support of the AF Board, represented by Mr Mwendandu (Kenya). In addition, some workshop participants shared in detail their experiences in the processes of becoming a Designated Authority (Madagascar) and a National Implementing Entity (Senegal) as well as challenges in project development (Madagascar and Morocco). Institutional strengthening to address adaptation, project bids, as well as baseline data and transaction costs for project development were identified as key challenges in drafting projects to access the AF. The workshop participants concluded that these issues continue to be pointed by developing countries as the major challenges/obstacles to have access to funding and to mainstream adaptation (IOC/INF-1287). IOC has been requested to organize a follow-up workshop to further assist in refining the project proposals meanwhile being developed in their home countries, as well as to organize a similar one for a new set of African countries and SIDS.

The IOC Self-driven Capacity-Development Strategy and principles are to be mainstreamed and harmonized with the work of other sections and programmes, which act from sub-regional to global levels. As such, tailored capacity development for Member States is not part of the IOC

regular programme. Usually, tailored activities arising from MS' requests, such as the request to organize the Nairobi Workshop, are carried through extrabudgetary funds, self-sponsoring and other contributions. Given the relevance of addressing ways of accessing the Adaptation Fund at a regional scale it was possible to reprogramme some available funds. By merging these funds with the hosting support by the Government of Kenya and sponsoring the participation of the IOC Fellows with the US Government extrabudgetary funds, the Nairobi workshop was possible. However, currently there are no available budgetary resources to implement in a timely manner the requests for a follow-up workshop, or a new regional workshop for a different group of African and SIDS countries. Nevertheless, IOC will continue making efforts to engage sponsors in contributing with extrabudgetary resources to implement such an important request.

The 50th Anniversary IOC Fellowship was created thanks to the support of NOAA and the US Department of State and was named IOC Fellowship Programme for Young African Leaders for Long-Term Adaptation to Climate Change on Ocean and Coastal Zones of Africa. The Fellowship Programme aims at contributing to the development of a new generation of African marine science leaders, enabled to collaborate in decision-making processes to make a difference on long-term adaptation to climate change, an issue of special relevance for African coastal communities' livelihoods. The IOC 50th Anniversary Fellowship Programme supported 12 Awardees. IOC partnered the fellowship Awardees with the Nairobi workshop national representatives to identify national priorities and for collaboration during the workshop, where IOC Fellows went through the process of selecting priorities and drafting concept project notes under the mentorship and guidance of the national authorities. IOC hopes that the Nairobi Workshop is the beginning of a stronger linkage between marine sciences and decision making.

IOC leads and coordinates, so far, the only Regional Project focused in long-term coastal adaptation in Africa which is funded through a GEF Grant that was initiated in 2008. The project is called Adaptation to Climate Change: Responding to coastline change in its human dimensions in West Africa through integrated area management (ACCC). The ACCC project is implemented at national level in five beneficiary countries (Cape Verde, Gambia, Guinea Bissau, Mauritania and Senegal) through the implementation of a set of demonstration measures, focusing on the enhancement of adaptive capacity of ecosystems and its communities, in five vulnerable sites. At the regional level, project coordination is provided by a dedicated unit based in the UNESCO Office in Dakar. Through this IOC regional unit, capacity-building support is provided to the countries in the areas of coastal management and planning, coastal erosion monitoring and the use of mapping tools for coastal zones. These objectives aim, in the long-term, to promote the inclusion of adaptation and coastal zone management into national policies, as well as to establish a learning mechanism for adaptive management – a key process in adaptation to climate change. All pilot activities are now on-going at the sites level. These include: stabilization of coastal erosion through rehabilitation of indigenous vegetative cover; soil conservation measures implemented to reduce runoff in Vile das Pombas and Ribiera da Lagoa (Cape Verde), Bald Cape to Cape Point (The Gambia); planting of local species for the stabilization of sand dunes (to be implemented in Bald Cape to Cape Point (The Gambia), Nouakchott (Mauritania); mangrove reforestation to be implemented in Porcos Island (in Guinea Bissau) from Djiffère to Palmarin, Fimela, Niodor, Palmarin, Sokone (in Senegal) and N'Diogo (in Mauritania); dissemination of new technologies (especially in energy) to release the pressure of degradation of ecologically important mangrove resources. The integration of adaptation issues in coastal management is a challenge, as few countries have mainstreamed these aspects into national and local policies. Senegal and Mauritania already have some drafted legislation, which potentially will help spurring this process. In addressing coastal erosion, an issue also raised in the negotiations of the UNFCCC COP15, two regional training workshops were held: Coastal Zone Cartography and Integrated Coastal Zone Management and Climate Change. As the project evolves, the network of practitioners is expanding and maturing for experience sharing, though far from developing a formal agreement. The major challenges relate with the timeliness of implementation of actions on the ground and the institutional arrangements in implementing the programme at national and regional levels. The ACCC project will be completed at the end of 2011.

The potential central role of IOC in mainstreaming adaptation to climate change in oceans and coasts, especially for vulnerable developing nations, lays on IOC's ability to mobilize the scientific community at large for collaboration, to build on the IOC contribution for climate services, scientific and decision-support tools and portfolio on planning for hazards, coastal and spatial planning and finally, the IOC Capacity Development Self-driven Strategy.

By deciding to assist countries at sub-national and national levels (Art. 14, 1/CP16, UNFCCC), the Cancun Framework for Adaptation is challenging the ways that several UN institutions collaborate with countries. The IOC regular programme has been developed to coordinate issues that are of sub-regional to global dimensions and only through extrabudgetary funds, initiatives have been tailored to assist Member States.

Building upon its experience with capacity development and tailored activities, the long-standing experience in climate and ocean data and analysis, IOC reaches a cross road, where IOC is now asked to assist countries by transferring much of its global and regional scientific facilities into promoting concrete local and sub-national long-term adaptation actions to build resilience of coastal biodiversity and communities livelihoods. Adaptation to climate change is a major institutional challenge for vulnerable Member States and for the international community, including the IOC and UNESCO, as it may lead to define new ways and levels of tailored assistance and human resources with different profiles.

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