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联合国教育、  
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**REPORT OF THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION  
ON ITS ACTIVITIES (2007-2009)**

**OUTLINE**

**Source:** Article 3.2 of the Statutes of the Intergovernmental Oceanographic Commission.

**Background:** The Intergovernmental Oceanographic Commission (IOC) of UNESCO was established by the General Conference at its 11th session (1960). At its 24th session (1987) the Conference granted IOC functional autonomy within UNESCO and at its 30th session (1999), approved a modification of the Statutes of the Commission that confirmed the functional autonomy of IOC and the requirement to report directly to the General Conference.

**Purpose:** The programme of IOC is implemented in accordance with the resources made available to it through the mechanisms specified in Article 10 of its Statutes, under the guidance provided by the resolutions, decisions and instructions of the IOC Assembly. The IOC Executive Council may make mid-term adjustments. In the United Nations system, IOC acts as the system-wide focal point for ocean science and ocean services.

The present report on its activities in 2007-2009 to the General Conference focuses on progress in implementing the priorities relevant to IOC under the Medium-Term Strategy 2008-2013 (34 C/4) and on the expected results under the Programme and Budget for 2008-2009 (34 C/5).

IOC's most direct expected outcomes established under Strategic Programmes 3 and 5 of the Overarching Objective 2, "Mobilizing science knowledge and policy for sustainable development", of the approved UNESCO Medium-Term Strategy 2008-2013 are as follows: (i) UNESCO's leadership of the United Nations system's activities in the areas of fresh water and the oceans at the global and national levels firmly established, including within the United Nations system's country-programming exercises; (ii) global monitoring reports produced periodically on the state of freshwater bodies and the oceans; (iii) tsunami early warning systems established and operational for the north-east Atlantic, the Mediterranean, and connected seas, the Indian Ocean, the Pacific Ocean, and the Caribbean and adjacent regions; (iv) vulnerable and weakened communities prepared to cope with, and to mitigate the impact of, disasters through access to and use of relevant information and knowledge; and (v) governments advised and assisted in the design of policies to mitigate the risks and impact of disasters.

**Decision required:** None.

## Background

1. The Intergovernmental Oceanographic Commission (IOC) of UNESCO was established by the General Conference at its 11th session in 1960. The General Conference at its 24th session, in 1987, granted IOC functional autonomy within UNESCO. The General Conference at its 30th session, in 1999, approved a modification of the Statutes of the Commission that confirmed the functional autonomy of IOC and the requirement to report directly to the General Conference.

2. The programme of IOC is implemented in accordance with the resources made available to it through the mechanisms specified in Article 10 of its Statutes, under the guidance provided by the resolutions, decisions and instructions of the IOC Assembly. The IOC Executive Council may make mid-term adjustments. In the United Nations system, IOC acts as the system-wide focal point for ocean science and ocean services.

## Progress in relation to the UNESCO Medium-Term Strategy 2008-2013

3. IOC's most direct expected outcomes established under Strategic Programmes 3 and 5 of the Overarching Objective 2, "Mobilizing science knowledge and policy for sustainable development", of the approved UNESCO Medium-Term Strategy 2008-2013 are as follows:

- UNESCO's leadership of the United Nations system's activities in the areas of fresh water and the oceans at the global and national levels firmly established, including within the United Nations system's country-programming exercises;
- global monitoring reports produced periodically on the state of freshwater bodies and the oceans;
- tsunami early-warning systems established and operational for the north-east Atlantic, the Mediterranean, and Connected Seas, the Indian Ocean, the Pacific Ocean, and the Caribbean and adjacent regions;
- vulnerable and weakened communities prepared to cope with, and to mitigate the impact of, disasters through access to and use of relevant information and knowledge;
- governments advised and assisted in the design of policies to mitigate the risks and impact of disasters.

4. Table 1 reports the main outcomes of IOC's activities to achieve the main results established in the UNESCO Medium-Term Strategy 2008-2013 (34 C/4).

**Table 1** – Main outcomes of IOC activities in 2008-2009 with respect to document 34 C/4

<b>OVERARCHING OBJECTIVE 2: Mobilizing science knowledge and policy for sustainable development</b>	<b>OUTCOMES</b>
<p><b>Paragraph 53</b></p> <p><i>UNESCO will further contribute to collaborative efforts by the United Nations system towards the sustainable management and utilization of natural resources, especially through established cooperative mechanisms of the United Nations system – such as</i></p>	<p>IOC has strengthened its lead role, exercised through the United Nations Oceans and Coastal Areas Network (UN-OCEANS), in providing relevant scientific and governance mechanisms for sustainable development of oceans and coasts.</p> <p>Within UN-Oceans IOC assumes the responsibility for the coordination and participates, on behalf of UNESCO, in a task force on marine protected areas and other area-based management tools. UN-Oceans' members have engaged in a stocktaking of coastal and marine projects ongoing in the pilot countries of the "One-UN" process; namely: Albania,</p>

<b>OVERARCHING OBJECTIVE 2: Mobilizing science knowledge and policy for sustainable development</b>	<b>OUTCOMES</b>
<p><i>UN-Water, UN-Oceans, UN Energy and with respect to biodiversity and ecosystems.</i></p>	<p>Cape Verde, Mozambique, Tanzania, Uruguay and Viet Nam. The compilation has identified about 50 projects at the national and regional levels carried out by the three implementing agencies of the Global Environment Facility (GEF) – the United Nations Development Programme (UNDP), the United Nations Environment Programme (UNEP), and the World Bank – the Food and Agriculture Organization of the United Nations (FAO), the International Maritime Organization (IMO), and the IOC. The stocktaking has highlighted opportunities for increased synergy in the areas of fishery management, integrated coastal zone management, and prevention of marine pollution.</p> <p>UNESCO, through IOC and jointly with UNEP, is leading the Regular Process for Global Reporting and Assessment of the State of the Marine Environment: seven meetings of the Assessment of Assessments (AoA) Group of Experts were organized between March 2007 and 2009. The draft AoA report was peer-reviewed and presented to the Ad Hoc Steering Committee in April 2009 (UNESCO, Paris) for transmission to the United Nations General Assembly in the autumn of 2009.</p> <p>With sponsorship from Monaco, the 2nd Symposium on the Ocean in a High-CO<sub>2</sub> World was held in October 2008. 220 scientists from 32 countries met to assess what is known about ocean acidification, and published a summary for policy-makers, a research priorities report and the Monaco Declaration. With respect to applications, a Guide to Best Practices for Ocean Acidification Research is in preparation.</p> <p>In the context of the United Nations system's emerging framework for the coordination of climate change activities, and on a proposal by the United Nations Secretary-General, UNESCO, together with the World Meteorological Organization (WMO), was designated as the convener of the "Science, Assessment, Monitoring and Early Warning" cross-cutting area.</p>
<p><b>Paragraph 66</b></p> <p><i>In particular, UNESCO will continue to build on its response to the Indian Ocean tsunami, consolidating its work in both the Indian Ocean and the Pacific Ocean, as well as expanding tsunami early warning systems to Africa, the South Pacific, the Mediterranean Sea, the North-East Atlantic and the Caribbean. UNESCO through its Intergovernmental Oceanographic Commission (IOC) will promote the end-to end concept for early warning systems, in partnership with the International Strategy for Disaster Reduction (ISDR) and the World Meteorological Organization (WMO).</i></p>	<p>In the Indian Ocean, the 6th Session of IOC's ICG/IOTWS was hosted by India in Hyderabad, from 7 to 9 April 2009. This system is operating under an interim service-provider scheme with the support of the Pacific Tsunami Warning Centre (PTWC) and the Japanese Meteorological Agency (JMA). Three potential Regional Tsunami Watch Providers (RTWPs) have recently initiated operations (Australia, India and Indonesia) with a view to taking over operationally in 2010.</p> <p>In the Pacific Ocean, the 23rd Session of IOC's ICG/PTWS was hosted by Samoa, from 16 to 18 February 2009. A Medium-Term Strategy was adopted, redefining the goals, objectives, and working group structure. At the UNESCO Office in Apia an IOC NOC post (National Officer) is being established to support tsunami-related activities in the south-west Pacific. The Pacific Tsunami Warning System is operational.</p> <p>In the Caribbean Sea and adjacent regions, a CARIBE-EWS Implementation Plan was finalized. National and regional structures and responsibilities were defined and preparations for the operational phase are well advanced. Funds have been made available to establish the Caribbean Tsunami Information Centre (CTIC) in 2009. The 4th Session of ICG/CARIBE EWS was held in Fort de France, Martinique, from 2 to 4 June 2009. This system is operating under an interim service-provider scheme with the support of the PTWC.</p>

<b>OVERARCHING OBJECTIVE 2: Mobilizing science knowledge and policy for sustainable development</b>	<b>OUTCOMES</b>
	<p>In the north-east Atlantic, the Mediterranean and connected seas, the 5th Session of the IOC's ICG/NEAMTWS was held in Athens, Greece, from 3 to 5 November 2008. The 3rd NEAMTWS Task Team meeting on the TWS architecture was held in Paris on 19 and 20 March 2008. In January 2009, the Secretariat of the NEAMTWS was established at the United Nations Campus in Bonn, Germany. The NEAMTWS is not yet operational.</p> <p>UNESCO/IOC is conducting a series of workshops to build capacity in the development of Standard Operating Procedures (SOPs) for tsunami warning and emergency response in the Indian Ocean and the South-East Asia regions. A regional workshop, held in Bangkok in May 2008, was designed to provide guidance, templates, and examples of best practices to the participants. The Work Plan also includes country-dedicated, technical assistance missions to Myanmar, Pakistan, Philippines and Viet Nam, to work directly with each country to build understanding and capacity to develop sound SOPs. The country missions comprise a series of three separate workshops to progressively strengthen each country's protocols and procedures, to assist in the development or improvement of their existing SOPs, and to conduct drills to test their respective SOPs. To date, seven country workshops have been completed, in the Philippines, Viet Nam and Pakistan, and over 150 participants have taken part in the training. Also, funds have been identified to initiate, in 2009, tsunami community preparedness pilot projects in four locations, in Colombia, Chile, Ecuador and Peru.</p> <p>Most of the activities mentioned above have been conducted in cooperation with WMO and ISDR, as well as with UNDP.</p>

### Priority Africa

5. IOC runs many capacity-development projects in Africa. Its self-driven capacity-development programme, in the last biennium years, has conducted three workshops, addressing marine science institutes at three levels – advanced leadership for directors, fund-raising for project leaders, and team-building and training for project scientists. We have built a network in 17 countries with about 50 directors who actively participated in one or more of the leadership workshops. East Africa has shown wonderful leadership and a wonderful self-driven approach, garnering four times more project funds, following our workshops, than the contributions we put in (from IOC, Swedish International Development Agency (SIDA) and the Government of Italy).

6. The high proportion of participating institutions that paid their way to attend workshops (overall about 30% in the case of Africa) is a good indicator of the traction the programme has gained. Another good indicator is the number of countries that co-funded workshops and independently undertook follow-up training.

7. IOC is engaging responsively in climate change in Africa. Firstly, in implementing a GEF-funded project Adaptation to Climate Change in the Coastal Zones of West Africa (ACCC); and secondly, in responding to the recently signed Memorandum of Understanding (MoU) with the African Union Commission (AUC). In this second context, IOC is preparing a science report for the AUC team that will represent Africa at the Conference of Parties (COP 15) in December 2009 in Copenhagen.

8. IOC runs long-standing training programmes for individual scientists in the Ocean Data and Information Network in Africa (ODIN-AFRICA) spread over 40 institutes in 25 countries. Its next

stage is ODIN-AFRICA IV, due to start shortly, and once again adequately supported by the Government of Flanders.

9. Global Ocean Observing Systems in Africa (GOOS-Africa) operates with African Climate Centres and with Remote-Sensing Centres in the analysis of Synthetic Aperture Radar (SAR) data.

### Progress in relation to the approved Main Lines of Action for 2008–2009 (34 C/5)

10. The Intergovernmental Oceanographic Commission, on behalf of UNESCO, continues to coordinate United Nations activities in ocean and coastal issues. IOC's action is aimed at fostering intergovernmental cooperation and improving governance through ocean sciences and services, and in particular at: (i) improving understanding of climate change, ecosystem functioning and biodiversity; (ii) observing and monitoring the open ocean and coastal seas; and (iii) developing institutional capacity for coastal and marine management.

11. IOC held its 24th Assembly in June 2007, its 41st Executive Council in June 2008 and its 25th Assembly in June 2009.

12. Table 2 reports main outcomes of IOC's activities to achieve the main results established in the Approved Programme and Budget for 2008–2009 (34 C/5).

**Table 2** – Selected outcomes of IOC activities in 2008–2009 in respect of the Approved 34 C/5

Main Lines of Action 34 C/5	OUTCOMES
<p><b>Para. 02026 – MLA 2: Oceans and coastal zones: improving governance and fostering intergovernmental cooperation through ocean sciences and services</b></p>	<p>Sixty per cent of the open-ocean module of the Global Ocean Observing System (comprising a network of buoys, moorings, floats, tide gauges and repeat ship-of-opportunity hydrographic lines) has been implemented so far.</p> <p>The West Africa project on Adaptation to Climate Change in Coastal Zones (ACCC) was officially launched in November 2008. Five national coordinators and one regional coordinator have been appointed.</p> <p>IOC, with ICES and PICES, organized the international Symposium on the Effects of Climate Change in the World's Oceans, in Gijón (Spain) in May 2008. It was attended by 400 experts from 48 countries; it was remarked as an important firm step towards close cooperation among marine researchers working in different disciplines relating to climate change and the sustainability of marine ecosystems.</p> <p>Publication of the Large Marine Ecosystem (LME) Report "A Perspective on Changing Conditions in LMEs of the World's Regional Seas" by UNEP is the result of a long-standing partnership among several United Nations organizations, including the IOC.</p> <p>Co-organization of the World Conference on Marine Biodiversity (Valencia, 11-15 November 2008), attended by 500 researchers and providing an assessment of current and future threats and potential mitigation strategies for conservation and regulation of marine resources.</p> <p>The development of an international strategy for a decadal survey of large-scale circulation and carbon-cycle processes in the oceans (2013–2023) was initiated.</p> <p>The largest global dataset of surface ocean carbon ever assembled was developed, in a common format and publicly available, to improve studies of ocean uptake of CO<sub>2</sub> generated by human activities.</p> <p>A Special issue of the <i>Elsevier Journal</i> titled "Harmful Algae, Harmful Algal Blooms (HABs) and Eutrophication" was published.</p> <p>A report on the "Status of Caribbean Coral Reefs After Bleaching and Hurricanes in 2005" was published and 4,000 copies were distributed. Launched at the World Bank, Washington, D.C., and at IOC-UNESCO, Paris, in January and February 2008.</p> <p>A 304-page report on the "Status of Coral Reefs of the World", by 372 authors, was published and 4,000 copies and 3,000 brochures were distributed. Launched in</p>

Main Lines of Action 34 C/5	OUTCOMES
	Washington, D.C., at the IPCC meeting in Poznan, Poland, and in Berlin, in December 2008, and in the GCRMN regions in December 2008 and January 2009.
<b>Para. 02027 – MLA 3: Promoting science, knowledge and education for disaster preparedness and mitigation, and enhancing national and regional coping capacities, including through support for the development of risk reduction networks and monitoring and assessment measures, such as tsunami early warning systems</b>	<p>Indian Ocean: national tsunami warning centres operational in Australia, India, Indonesia, Malaysia and Thailand.</p> <p>Caribbean Sea: national and regional structures and responsibilities defined; preparation for operational phase well advanced.</p> <p>European System: defined regional architecture, cross-Mediterranean enhancement developed.</p> <p>Pacific system: regional responsibilities newly defined, communication improved, end-to-end performance assessed.</p> <p>Guidelines and standards developed, adapted and implemented. IOC Manuals and Guides #49 (“Tsunami Preparedness for Disaster Managers and Planners”) translated and printed (English, French, Spanish).</p> <p>Performance tests in the Pacific (October 2008) run and evaluated; performance test planned for 2009 in the Indian Ocean.</p> <p>Following the organization of three expert group meetings, the draft guidelines on Hazard Awareness and Risk Mitigation in Integrated Coastal Area Management (ICAM) have been prepared in collaboration with WMO, UNEP, UNU-EHS and NOAA. The final document is ready for publication.</p> <p>Ownership by Member States has increased, hence sustainability has increased and is now nearly ensured for some tsunami warning systems. The ICG Secretariat for the Indian Ocean Tsunami Warning System (IOTWS) is now funded till 2013 by Australia. The ICG Secretariat for the North-East Atlantic, the Mediterranean and Connected Seas (NEAMTWS) has been established in Bonn, Germany.</p>

### Progress in relation to the last report (2005-2006)

13. In the outlook of the IOC Report on its Activities (2005–2006) to the 34th session of the General Conference, it was stated that:

(...) “the world community faces growing challenges arising from marine environmental degradation and pollution, biodiversity losses and natural hazards, especially in the coastal zone. How to respond to these global issues, while facing the increasingly complex challenges of sustainable development and ecosystems-based management is shaping the work of the IOC and its current main lines of action”.

The lead role IOC has been given in some of the United Nations-wide initiatives on oceans, notably in the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, is in part the result of the focusing exercise IOC Member States have carried out by defining High-Level Objectives (HLO) to respond to the above-described global issues.

### Challenge and outlook

14. Fifteen years after the first concept of a global ocean observing system was developed, thanks to the successful implementation of major GOOS elements (including sea-ice extent, sea level and surface primary productivity monitoring from space, complemented by *in situ* networks of drifting buoys, Argo floats and tide gauges, IOC can now genuinely take claim for a working, sustained global ocean observing system. However, we are witnessing a decreasing level of additional contributions to the global system from national entities, with the potential impact that the initial targets and goals may not be reached. It is therefore critical to revitalize multilateral engagement in support of global ocean observations and to further clarify what role do non-IOC programmes (such as GEOSS and POGO) play and what do they contribute to the global

observation of the oceans. OceanObs'09, in Venice, from 21 to 25 September 2009, will be an opportunity to create a consensus on the ocean observation needs in the fields not currently covered by existing systems (for example, biology, biogeochemistry, carbon, nutrients).

15. Furthermore, in recent years IOC arrived at a very precarious relationship between resources available and commitments undertaken or delegated. Thus, the re-enforcement of IOC with its current mandate inside UNESCO requires a more secure budgetary horizon guaranteed by a negotiated and binding agreement with UNESCO, and the Member States' commitment to more effective arrangement.

16. **Percentage of expenditure (disbursements) in 2008 by source of funding (regular budget vs extrabudgetary).** The chart below shows 2008 expenditure by source of funding – the same trend in RP/EXB ratio has been observed over the last 2 biennia.

