

**Intergovernmental Oceanographic Commission**  
*Reports of Governing and Major Subsidiary Bodies*



**Twenty-fifth Session  
of the Assembly**

Paris, 16–25 June 2009

**UNESCO**

**Intergovernmental Oceanographic Commission**  
*Reports of Governing and Major Subsidiary Bodies*

# **Twenty-fifth Session of the Assembly**

Paris, 16–25 June 2009

**UNESCO 2009**

IOC-XXV/3  
Paris, November 2009  
Original: English

## TABLE OF CONTENTS

page

<b>1.</b>	<b>OPENING .....</b>	<b>1</b>
<b>2.</b>	<b>ORGANIZATION OF THE SESSION .....</b>	<b>2</b>
2.1	ADOPTION OF THE AGENDA .....	2
2.2	DESIGNATION OF THE RAPPORTEUR .....	2
2.3	ESTABLISHMENT OF SESSIONAL COMMITTEES .....	2
2.4	INTRODUCTION OF DOCUMENTATION AND TIMETABLE.....	4
2.5	ANTON BRUUN AND N.K. PANIKKAR MEMORIAL LECTURES .....	4
<b>3.</b>	<b>STATUTORY REPORTS .....</b>	<b>6</b>
3.1	STATEMENT OF THE CHAIRMAN ON THE STATE OF IOC.....	6
3.2	REPORT BY THE EXECUTIVE SECRETARY ON PROGRAMME AND BUDGET IMPLEMENTATION (2008–2009) AND INTRODUCTION TO THE DRAFT PROGRAMME AND BUDGET FOR 2010–2011 .....	7
3.3	REPORT ON THE IOC ACTIVITIES (2007–2008) TO THE THIRTY-FIFTH GENERAL CONFERENCE OF UNESCO .....	11
<b>4.</b>	<b>PROGRAMME MATTERS REQUIRING DECISIONS BY THE ASSEMBLY.....</b>	<b>12</b>
4.1	GENERAL POLICY ISSUES, UN CONVENTIONS AND AGREEMENTS.....	12
4.1.1	<b>Preparation for the Commemoration of the Fiftieth Anniversary of the IOC (1960–2010) and the Ministerial Round Table at the Thirty-fifth General Conference of UNESCO .....</b>	<b>12</b>
4.1.1.1	<i>Preparation for the Commemoration of the Fiftieth Anniversary of the IOC .....</i>	<i>12</i>
4.1.1.2	<i>Ministerial Round Table at the Thirty-fifth General Conference of UNESCO .....</i>	<i>14</i>
4.1.2	<b>Consideration of the Legacy of the International Polar Year (IPY) (2007–2009) .....</b>	<b>15</b>
4.1.3	<b>Relations with the Convention on Biological Diversity.....</b>	<b>16</b>
4.1.4	<b>Report of the Ninth Session of the IOC Advisory Body of Experts on the Law of the Sea (IOC/ABE–LOS IX).....</b>	<b>17</b>
4.2	MANAGEMENT PROCEDURES & POLICIES FOR THE SUSTAINABILITY OF COASTAL & OCEAN ENVIRONMENT & RESOURCES (HIGH LEVEL OBJECTIVE 4).....	20
4.2.1	<b>Data and Information .....</b>	<b>21</b>
4.2.1.1	<i>Report of the Twentieth Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XX).....</i>	<i>21</i>
4.2.1.2	<i>IOC Collaboration with the Ocean Biogeographic Information System (OBIS) .....</i>	<i>24</i>
4.2.2	<b>.. Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects.....</b>	<b>26</b>
4.2.3	<b>.. Report of the Tenth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE-X).....</b>	<b>29</b>

4.2.4	<b>Report of the Seventh Session of the IOC Regional Committee for the Western Indian Ocean (IOCWIO-VII) .....</b>	<b>31</b>
4.2.5	<b>Report on the Follow-up to the Seventh Session of the IOC Sub-Commission for the Western Pacific (26–29 May 2008).....</b>	<b>32</b>
4.3	<b>SAFEGUARDING THE HEALTH OF OCEAN ECOSYSTEMS (HIGH LEVEL OBJECTIVE 3).....</b>	<b>33</b>
4.3.1	<b>Secretariat Report on Ocean Sciences Section: Programme, Structure and Activities .....</b>	<b>33</b>
4.3.2	<b>IOC Role in Standard Settings and Guidelines .....</b>	<b>36</b>
4.3.2.1	<i>Adoption of the Equation of State of Sea Water .....</i>	<i>36</i>
4.3.2.2	<i>The International Nutrients Scale System: a proposal for a joint ICES-IOC Working Group to develop international standards for nutrients .....</i>	<i>37</i>
4.3.2.3	<i>Nutrient Export from Watersheds – User Scenario Evaluation (NEWS2USE) .....</i>	<i>38</i>
4.3.3	<b>Report of the Ninth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB-IX) – HAB and GEOHAB Programme.....</b>	<b>38</b>
4.3.4	<b>Secretariat Report on Capacity-development Section: Programme, Structure and Activities .....</b>	<b>39</b>
4.4	<b>MITIGATION OF THE IMPACTS AND ADAPTATION TO CLIMATE CHANGE AND VARIABILITY (HIGH LEVEL OBJECTIVE 2).....</b>	<b>42</b>
4.4.1	<b>Oceans and Climate .....</b>	<b>42</b>
4.4.1.1	<i>WMO-IOC-ICSU World Climate Research Programme (WCRP): Report and Review .....</i>	<i>42</i>
4.4.1.2	<i>Climate Observations – GCOS, UNFCCC and OceanObs'09.....</i>	<i>43</i>
4.4.2	<b>Report of the Ninth Session of the Intergovernmental Committee for the Global Ocean Observing System (I-GOOS) .....</b>	<b>44</b>
4.4.3	<b>Instructions to the Third Session of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology (JCOMM-III) .....</b>	<b>46</b>
4.4.4	<b>Report on Ocean Fertilization.....</b>	<b>48</b>
4.5	<b>PREVENTION AND REDUCTION OF THE IMPACTS OF NATURAL HAZARDS (HIGH LEVEL OBJECTIVE 1).....</b>	<b>50</b>
4.5.1	<b>Report of the Second Meeting of the IOC TOWS Working Group: Tsunamis and Other Ocean Hazards Warning and Mitigation Systems (TOWS-WG-II) .....</b>	<b>50</b>
4.5.2	<b>Reports from the IOC Intergovernmental Coordination Groups .....</b>	<b>52</b>
4.5.2.1	<i>Sixth Session of the IOC Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS) .....</i>	<i>53</i>
4.5.2.2	<i>Fifth Session of the IOC Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS) .....</i>	<i>54</i>
4.5.2.3	<i>Fourth Session of the IOC Intergovernmental Coordination Group for Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS) .....</i>	<i>56</i>

4.5.2.4	<i>Twenty-Third Session of the IOC Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the Pacific (ICG/PTWS)</i> .....	57
<b>5.</b>	<b>ADMINISTRATION AND MANAGEMENT .....</b>	<b>59</b>
5.1	REPORT BY THE CHAIRPERSON OF THE FINANCIAL COMMITTEE ON THE IOC DRAFT PROGRAMME AND BUDGET FOR 2010–2011 (DRAFT 35 C/5) .....	59
5.2	ELECTIONS OF THE OFFICERS OF THE COMMISSION AND MEMBERS OF THE EXECUTIVE COUNCIL .....	65
5.2.1	Election of the Chairperson of the Commission.....	65
5.2.2	Election of the Vice-Chairpersons of the Commission .....	65
5.2.3	Election of the Members of the Executive Council.....	66
5.3	DATES AND PLACES OF THE 26 <sup>TH</sup> ASSEMBLY AND THE 43 <sup>RD</sup> AND 44 <sup>TH</sup> SESSIONS OF THE EXECUTIVE COUNCIL.....	66
5.4	THEMES OF THE A. BRUUN AND N.K. PANIKKAR MEMORIAL LECTURES AT THE 26 <sup>TH</sup> IOC ASSEMBLY .....	67
<b>6.</b>	<b>SUPPLEMENTARY ITEMS .....</b>	<b>67</b>
6.1	THE FUTURE OF THE IOC .....	67
6.2	EXPANSION OF QUOTA OF SEATS FOR GROUP II MEMBER STATES IN THE IOC EXECUTIVE COUNCIL .....	70
6.3	PROCEDURES IN FUTURE CONSULTATION PROCESS ESTABLISHING A SHORT LIST FOR EXECUTIVE SECRETARY OF IOC .....	71
<b>7.</b>	<b>ADOPTION OF RESOLUTIONS AND SUMMARY REPORT .....</b>	<b>73</b>
<b>8.</b>	<b>CLOSURE.....</b>	<b>73</b>

## ANNEXES

- I. [AGENDA](#)
- II. [ADOPTED RESOLUTIONS](#)
- III. [ADDRESSES AND STATEMENTS](#)
  - A. [Opening address By Mr Koïchiro Matsuura, Director-General of the United Nations Educational, Scientific and Cultural Organization \(UNESCO\)](#)
  - B. [Chairman's statement by Lic. Javier A. Valladares](#)
  - C. [Tribute to Dr Patricio Bernal, IOC Executive Secretary by Professor David Pugh, Past Chairman of the Intergovernmental Oceanographic Commission of UNESCO](#)
  - D. [GOODS: Argentina's intervention under item 4.1.3](#)
  - E. [Statement of H.E. Prof. Manuel Maria Carrilho, Ambassador, Permanent Delegate of Portugal to UNESCO](#)

IV. LECTURES

A. THE A. BRUUN MEMORIAL LECTURE, 2009

- Thermodynamics and Equation of State of Seawater by Trevor J. McDougall

B. THE N.K. PANIKKAR MEMORIAL LECTURE, 2009

- Research: an Effective Tool in Capacity-development by Dr Venu Ittekkot

V. CONTRIBUTIONS OF MEMBER STATES, IOC PROGRAMMES AND PARTNERS TO THE 50<sup>TH</sup> ANNIVERSARY OF THE INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION (IOC)

VI. RATIONALE FOR ESTABLISHING THE MINISTERIAL ROUND TABLE ON OCEAN GOVERNANCE

VII. REVISED TERMS OF REFERENCE OF THE IOC INTERSESSIONAL FINANCIAL ADVISORY GROUP

VIII. REPORT OF THE CHAIRMAN OF THE RESOLUTIONS COMMITTEE

IX. RESULTS OF ELECTIONS AND LIST OF IOC MEMBER STATES

X. LIST OF DOCUMENTS

XI. LIST OF PARTICIPANTS

XII. LIST OF ACRONYMS

up-to-date scientific knowledge to governments for their decision-making process, a mandate that is only occasionally applied, and **further noted** that, in the current context, this role is being filled concurrently with the provisions of two major UN conventions, the LC/LP and the CBD.

396        **The Assembly decided** to include ocean fertilization as an agenda item for the 43<sup>rd</sup> Session of the Executive Council, with a view to considering in more depth the future role of IOC in: (i) providing scientific advice and expertise on ocean fertilization; and (ii) the possible involvement of IOC/ABE-LOS in assessing the potential link between UNCLOS and ocean-fertilization issues.

#### 4.5    PREVENTION AND REDUCTION OF THE IMPACTS OF NATURAL HAZARDS (HIGH LEVEL OBJECTIVE 1)

##### 4.5.1   **Report of the Second Meeting of the IOC TOWS Working Group: Tsunamis and Other Ocean Hazards Warning and Mitigation Systems (TOWS-WG-II)**

397        The Co-Chairman of the Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG), Dr Neville Smith, introduced this item. He recalled that, by IOC Resolution XXIV-14, the IOC Assembly, at its 25<sup>th</sup> Session, was expected to review the results, mandate and purpose of the TOWS-WG.

398        Resolution EC-XLI.6 further instructed the TOWS-WG to prepare a detailed report on the implementation of the actions and recommendations specified in the Resolutions, as well as on progress in the harmonization of regional tsunami warning and mitigation systems, for consideration by the Assembly at its 25<sup>th</sup> Session.

399        The report of the Co-chairman of TOWS-WG focused on:

- (i)      Results of the 2<sup>nd</sup> meeting of the TOWS-WG (TOWS-WG-II/3), also based on the results of the Global Meeting of the Intergovernmental Coordination Groups for Tsunami Warning Systems (Global TWS; Paris, 24–27 March 2009) and their effective inputs into TOWS-WG
- (ii)     State of implementation of the tasks assigned to TOWS-WG by the Assembly through IOC Resolution XXIV-14 and Resolution EC-XLI.6, as well as by the TOWS-WG itself (document TOWS-WG-I/3)
- (iii)    Recommendations for the possible continuation of the TOWS-WG for the next intersessional period (mandate, purpose, structure).

400        Highlighting the key results of TOWS-WG-II, Dr Neville Smith stressed that there is still a need to work on the development of harmonized subsidiary working group structures across ICGs as a foundation for inter-operability, with a view to preparing recommendations for IOC principles, criteria and procedures for ocean-related hazards warning and mitigation systems. He also mentioned the proposal to establish three inter-ICG Task Teams devoted, respectively, to sea level, preparedness, and tsunami watch operations, with a view to facilitating coordination of activities, development of common requirements and standards, and sharing of best practices, as detailed in the Draft Resolution XXV-(4.5.1). The Assembly was invited also to consider the nature and reporting line of the Task Teams in relation to TOWS-WG. According to the IOC Guidelines for the Structure and Responsibilities of the Subsidiary Bodies of the Commission (IOC/INF-1193), TOWS-WG, a task team itself, cannot establish secondary subsidiary bodies.

401        The Co-Chairman of TOWS-WG stressed the inclusion of requirements on the collection and exchange of sea-level data for tsunami warning purposes in the work programmes of GLOSS and DBCP, as well as the possible review of GLOSS terms of reference to reflect the operational requirements of the tsunami warning centres; and there is also a need for ICGs to



identify high-priority science issues that can benefit from contributions from IOC programmes and scientific and technical subsidiary bodies in the context of the Programme and Budget for 2010–2011.

402 He mentioned the recommendation to investigate with the Comprehensive Nuclear-Test-Ban Treaty Organization (CTBTO) Secretariat the conclusion of an agreement on the provision of, for example, seismic data to TWCs and the coordination of related matters, as well as the investigation with other seismic networks, of the possibilities for improved exchange and standardization of real-time seismic data and coordination of training programmes on global seismic monitoring for tsunami warning purposes.

403 The facilitation of the exchange, review and adoption of documents and guidelines related to risk assessment methodologies and other standards developed by the ICGs is required to improve collaboration among ICGs.

404 The Co-Chairman of TOWS-WG mentioned the need to develop a document with definitions and terminology on hazards, disasters, vulnerability and risks, drawing on existing documents developed by bodies like UN/ISDR, for use by the IOC Secretariat, subsidiary bodies and programmes.

405 He also recommended the assessment of the IOC Oceanographic Data Exchange Policy (Resolution XXII-6) as it applies to tsunami warning systems and the monitoring of its implementation to ensure the open, free and unrestricted sharing of tsunami-relevant observational data needed for timely and effective ocean-related hazard detection, analysis and warning for coastal communities, as well as the possible revision of the terms of reference of the GEBCO Guiding Committee to promote and coordinate the development of high-resolution bathymetric data in coastal areas and of digital elevation models.

406 Given the different states of development of the respective ICGs in implementing TWSs in their regions and the need for continuing coordination, the Co-Chairman of TOWS-WG recommended the continuation of TOWS-WG for the next intersessional period with the same mandate and membership.

407 Japan supported the Draft Resolution, but was concerned about possible ineffectiveness in inter-ICG Task Teams' activities, owing to job concentration on particular nations or organizations. It proposed several ideas to ensure the effectiveness of the Task Teams: adding the IOC Tsunami Unit and ITIC to the Task Teams' membership; giving priority to the Task Teams' terms of reference; and IOC providing necessary costs for the Task Teams' activities. Japan further emphasized the importance of each nation and region taking whatever measures are available to them for tsunami disaster prevention, along with the Task Teams' work.

408 The United States of America noted the considerable progress made to advance the Global Ocean-related Hazards Warning and Mitigation System framework over the past year, in response to the TOWS-WG-I report, through the ICGs and the TOWS Working Group 3. It underscored the IOC Secretariat's success in bringing together all of the ICG officers, Working Group Chairpersons and invited experts to discuss issues of common concern. The U.S.A. also noted the Secretariat's efforts to engage the CTBTO, and that CTBTO data, once they are available to Tsunami Warning Centres, will make an important contribution to the global framework. CTBTO data alone are not sufficient, however, for effective tsunami warning, in most cases. The U.S.A. asked the Secretariat to engage the U.S. Geological Survey, for example, in a formal partnership with the IOC to provide data from its over 150-station global seismic network. The U.S.A. also noted that many of the data-buoy systems deployed by IOC Member States to gather and transmit essential real-time oceanographic and meteorological information may be rendered inoperable at any given point in time as a result of deliberate and accidental vandalism. The impact of such vandalism cannot be underestimated. The U.S.A. applauded the work of the Secretariat in responding to a long-standing Member State request

- 409 France, as a participant in the four ICGs, confirmed its support to the TOWS-WG recommendations. France is developing a national programme involving several national agencies under the aegis of the Ministry in charge of risk prevention and of the Ministry in charge of civil security. France is also favourable to the systematic organization of exercises.
- 410 Several Member States expressed their appreciation of the Co-Chairman TOWS-WG's report and welcomed the progress achieved.
- 411 The Republic of Korea specifically supported the cooperation of IOC with other bodies to expand its work to include other ocean-related hazards, and the establishment of a Fund-in-Trust for multi-hazard warning systems.
- 412 Portugal supported the work of TOWS to streamline and optimize the structure and provide guidance with a view to making the functioning of the ICGs more efficient.
- 413 The Representative of the UN/ISDR supported the work of TOWS and offered the participation of ISDR in the Task Team proposed by TOWS.
- 414 The Representative of the IHO, commenting on the TOWS-WG-II report and the related Draft Resolution XXV-(4.5.1), suggested that there was no particular need to make any amendment to the GEBCO Terms of Reference approved last year, but rather request GEBCO to give priority to the development of high-resolution bathymetric data in coastal areas and of digital elevation models, and to report progress to the IOC Executive Council at its 43<sup>rd</sup> Session. The Representative of IHO also suggested that the Assembly request the IBC projects to contribute to GEBCO in this endeavour.
- 415 The Co-Chairman clarified the scope of the proposed Terms of Reference of the Task Teams, which is not an expansion of work, but a process of harmonization on the basis of the mature state of the existing Working Groups within the ICGs. With respect to GEBCO, the spirit behind the decision of TOWS comprises specific actions to obtain data that the ICGs require.
- 416 The Head of the Tsunami Unit, Mr Peter Koltermann, reminded the Assembly of the offer of China to host PTWS-XXIV and welcomed the very rich comments from the Member States. He appreciated the generous and continuous support of Norway, in particular for the Global Meeting of ICGs, and thanked all Member States for the support they have given to the work of the Unit and for their important extrabudgetary contributions.
- 417 The Chairman thanked all the presenters and Member States and asked the Representative of IHO to provide his comments to Member States to introduce changes as needed in the Draft Resolution.
- 418 **The Assembly adopted [Resolution XXV-13](#)**, incorporating actions in respect of all four ICGs and of the TOWS-WG.

#### **4.5.2 Reports from the IOC Intergovernmental Coordination Groups**

- 419 The Vice-Chairman in charge of regional affairs, Professor Mário Ruivo, introduced this item.

*4.5.2.1 Sixth Session of the IOC Intergovernmental Coordination Group  
for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS)*

- 420 The Chairman of the IOC International Co-ordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), Dr Jan Sopaheluwakan, introduced this item. By Resolution XXIII-12, the IOC Assembly created an Indian Ocean Tsunami Warning and Mitigation System (IOTWS) and established an Intergovernmental Coordination Group (ICG) for this System. As a primary subsidiary body of the IOC, the ICG is required (pursuant to Rule of Procedure 48.3) to report on its work to a Governing Body.
- 421 Dr Sopaheluwakan summarized the intersessional activities of the ICG/IOTWS, including its Working Group intersessional meetings hosted by the Government of Indonesia in Bali, in November 2008.
- 422 The ICG/IOTWS, at its 6<sup>th</sup> Session (Hyderabad, India, 7–9 April 2009), decided to: adopt the guidelines on “Tsunami risk assessment and mitigation for the Indian Ocean: knowing your tsunami risk – and what to do about it” (IOC Manuals and Guides, 52 – IOC/2009/MG/52), submitted by Working Group 3; adopt revised Terms of Reference for the ICG/IOTWS Steering Group; establish a Task Team to review the Working Group Structure and Terms of Reference; invite the Working Group Chairpersons and Vice-Chairpersons to remain in place until the review of the Working Group Structure and Terms of Reference is completed; reconstitute the Regional Tsunami Watch Provider (RTWP) Coordination Group as the RTWP Task Team, reporting to Working Group 5.
- 423 The Chairman of the ICG/IOTWS described the significant achievements of the ICG/IOTWS since its establishment in 2005, including the installation of core seismic detection and sea-level monitoring networks. He drew attention to the problems of vandalism, noting that out of 20 deep-ocean tsunameters deployed to date, nine were not operating due to intentional or accidental damage. The ICG's Working Group 3 on risk assessment prepared Risk Assessment Guidelines, with technical and financial support from UNDP, and an Indian Ocean Tsunami Hazard Map, with technical support from Geoscience Australia and financial support from the Australian Agency for International Development.
- 424 Dr Sopaheluwakan provided an update on the progress in the implementation of a network of RTWPs. He listed the activities and initiatives being taken to address mitigation, preparedness and response issues and described the main challenges facing the IOTWS, including the completion of system implementation, data exchange, RTWP interoperability, risk assessment and community resilience, and system sustainability. He also listed the planned activities of the ICG/IOTWS in the next intersessional period.
- 425 Japan appreciated the accomplishments of all the ICGs, especially the ICG/IOTWS's achievements, including the development of Guidelines on Tsunami Risk Assessment. Japan also expressed its high expectations of the RTWPs' Level 2 service. It commented on the necessity for further improvements and accumulation of experience in the RTWPs, as well as developing national warning mechanisms in Member States which receive RTWP information. Japan offered its continuous assistance to the region by providing Interim Tsunami Watch Information and supporting capacity-building activities.
- 426 The U.S.A. commended the work of the ICG/IOTWS-VI and noted the progress in defining the complex issue of Regional Tsunami Watch Provider operations. It also noted the ICG's decision to review its working group structure in the light of the TOWS-WG-I and II recommendations and expressed confidence that the ICG would take steps to align with GOHWMS to the extent possible. The U.S.A. noted the achievement of the ICG/IOTWS Working Group on risk assessment in the publication of risk assessment guidelines for the Indian Ocean and commented that this document would be of benefit to other ICGs.

- 427 Australia noted the many important issues that were discussed and resolved at ICG/IOTWS-VI in Hyderabad and announced that the Joint Australian Tsunami Warning Centre plans to become fully operational as an RTWP by the end of 2009. Australia was pleased to confirm to the Assembly that it will continue to support the IOC Secretariat for the ICG/IOTWS in Perth, Australia, for a further four years from July 2009.
- 428 India noted that its offer to provide RTWP Level 1 services had been accepted at ICG/IOTWS-V in Putrajaya, Malaysia, in April 2008. India confirmed that it is now ready to provide RTWP Level 2 service for the Indian Ocean. In view of these developments and the progress report presented by the Chairman of ICG/IOTWS, India requested IOC to define a time-frame for declaring the IOTWS fully operational and to specify criteria for establishing the IOTWS.
- 429 The Head of the Tsunami Unit, Mr Peter Koltermann, noted India's statement and referred to the timetable and process established by the ICG/IOTWS.
- 430 Indonesia recalled that it had held coordination meetings with all stakeholders in the Indonesian Tsunami Early Warning System to discuss progress of and plan for the future development of the system. The last stage of development is the integration of all monitoring systems into a Decision Support System. Indonesia announced that, by March 2010, it should be able to provide RTWP Level 2 services for the Indian Ocean and Level 3 services for some regions of Indonesia. Indonesia noted that the Indian Ocean Wave Exercise will be held on 14 October 2009 and will be based on the 26 December 2004 scenario. Indonesia noted and supported the comments made by the Chairman ICG/IOTWS on the issue of vandalism.
- 431 Thailand appreciated the progress in the IOTWS. Thailand has received much support from the IOC, both from the headquarters Secretariat and the Programme Office in Perth. One of the outstanding projects supported by IOC is the Adaptive Learning in Disaster Management for Community Awareness and Resilience (ALDCAR). Building on this project, Thailand is planning to expand the coverage of community preparedness. It looks to IOC for further support for community preparedness. Thailand informed the Assembly that it is developing tsunami numerical models with support from IOC.
- 432 Iran stated that it had decided to establish a National Tsunami Warning Centre to cover the Makran source zone.
- 433 **The Assembly accepted** the Executive Summary Report of the ICG/IOTWS-VI and **decided** further action by Resolution XXV-13. (Item 4.5.1)
- 4.5.2.2 *Fifth Session of the IOC Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS)*
- 434 The Chairman of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS), Professor Stefano Tinti, introduced this item.
- 435 He reported on the progress achieved and discussed during the 5<sup>th</sup> Session of the Intergovernmental Coordination Group (ICG/NEAMTWS-V; Athens, Greece, 3–5 November 2008) which reviewed the progress made during the intersessional period (January–November 2008). The four Working Groups, together with the Task Team on the NEAMTWS architecture, met in the intersessional period and reported to the ICG (ICG/NEAMTWS-V) on their activities.
- 436 ICG/NEAMTWS-V requested Member States to openly share and exchange all tsunami-relevant real-time observational data as appropriate and in accordance with the UNESCO/IOC Oceanographic Data Exchange Policy (Resolution XXII-6). It also requested Member States to

consider extrabudgetary contributions to IOC in support of NEAMTWS and to nominate National Tsunami Warning Focal Points (TWFPs) and Tsunami National Contacts (TNCs), although significant progress has been made since last year.

- 437 The ICG decided to extend the duration and mandate of the Task Team on the NEAMTWS architecture, and agreed on the revised Roles and Requirements for the National Tsunami Watch Centres (NTWCs) and the Regional Tsunami Watch Centres (RTWCs), as detailed in the report of the Second Meeting of the Task Team (ICG/NEAMTWS-TT-II/3). With respect to tsunami alert nomenclature, the ICG decided that the term “warning” will be used only by the NTWCs.
- 438 The ICG decided that sea-level data from the NEAMTWS core network should be freely available to RTWCs and NTWCs, once these are established. As an interim solution, these data can be provided to the IOC Tsunami Sea Level Station Monitoring Facility (<http://www.ioc-sealevelmonitoring.org>).
- 439 Following the announcements made at the 41<sup>st</sup> Session of the IOC Executive Council (Paris, 24 June–1 July 2008) and at the 5<sup>th</sup> Session of the ICG/NEAMTWS (Athens, 3–5 November 2008), the IOC Secretariat for ICG/NEAMTWS and Liaison Office with UN/ISDR was established on the Bonn UN Campus in January 2009, with initial financial contributions from Germany and UN/ISDR.
- 440 The Chairman of the ICG informed the Assembly of the future NEAMTWS foci: (i) formalizing the commitment by NTWCs/RTWCs; (ii) facilitating the participation of North African Member States; and (iii) re-vitalizing the IOC policy on data-sharing in respect of tsunami warning purposes.
- 441 Turkey fully supported the ICG/NEAMTWS coordination process and confirmed its willingness to host the next ICG meeting in November 2009 in Istanbul. Turkey reiterated its determination to establish a Regional Tsunami Watch Center (RTWC) covering the Eastern Mediterranean, Aegean Sea, Marmara Sea and the Black Sea.
- 442 France reminded the Assembly that it is ready to host a regional centre for the western Mediterranean. It also noted that the architecture defined by the Task Team on the NEAMTWS Architecture should be endorsed by the next ICG/NEAMTWS meeting, in Istanbul.
- 443 Greece recalled its strong support for the ICG/NEAMTWS by hosting the 5<sup>th</sup> Session in Athens. It confirmed its willingness to establish an RTWC in the Aegean Sea, but considered that the designation of the area of responsibility is premature and needed written confirmation from Member States.
- 444 Portugal briefly reported on its national activities and confirmed that some progress has been made by the group, but it also stressed that there is a very active effort needed to encourage concrete actions from Member States and scientific and technical groups. It stated that more involvement of the Officers and the Secretariat is needed for further achievements.
- 445 The Representative of UN/ISDR confirmed his organization's support to ICG/NEAMTWS and acknowledged the IOC support to the ISDR-coordinated Consortium Initiative through the ICG/NEAMTWS Secretariat and ISDR Liaison Office in Bonn.
- 446 The Head of the IOC Tsunami Unit, Mr Peter Koltermann, noted the very rich and helpful comments provided by Member States, as well as the overlap in definitions of the regions proposed by Greece and Turkey.
- 447 **The Assembly accepted** the Executive Summary Report of ICG/NEAMTWS-V and **decided** further action by Resolution XXV-13. (Item 4.5.1)

*4.5.2.3 Fourth Session of the IOC Intergovernmental Coordination Group for Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS)*

- 448 The Chairwoman of the Intergovernmental Coordination Group for Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS), Dr Lorna Inniss (Barbados), introduced this item.
- 449 Dr Inniss reported on the results of the Fourth Session of the Intergovernmental Coordination Group (ICG/CARIBE EWS-IV; Fort de France, Martinique, 2–4 June 2009), hosted by France. She also reported on progress on: the CARIBE EWS Implementation Plan and the establishment of a Caribbean Tsunami Information Centre (CTIC), with the support of the Government of Italy and facilitated through the UNDP regional project on Enhancing Resilience in the Caribbean.
- 450 To date, 23 Member States have nominated Tsunami Warning Focal Points (TWFPs) and ICG/CARIBE EWS has developed stronger links with regional disaster-management organizations and several regional partners, such as CDERA, CEPREDENAC, EIRD, SRC, and UNDP.
- 451 Regarding the proposed Caribbean Tsunami Warning Centre (CTWC), to be established by 2010, the ICG/CARIBE EWS-IV approved a technical document prepared by its Working Group 1 on Technical, Logistical, and Administrative Requirements of a Regional Tsunami Warning Centre for the CARIBE EWS (Doc. ICG/CARIBE EWS-IV/13, which will be used as a standard to evaluate offers of Member States to host the CTWC). One Member State indicated that it was initiating in 2009 a three-phase approach to decide on the feasibility of hosting CTWC. Venezuela has also previously mentioned its interest in hosting the CTWC.
- 452 With respect to the CTIC, Dr Inniss recalled that Barbados had previously offered to host the CTIC and that this has now been formally approved by the Government of Barbados. Barbados announced its formal offer to host the CTIC on behalf of the Member States of the ICG, at ICG/CARIBE EWS-IV. The funding for CTIC has been made available through UNDP, from the Government of Italy, for establishing the CTIC in Barbados in 2009.
- 453 The Chairwoman welcomed the tsunami modelling efforts in the Caribbean developed by the University of Puerto Rico (U.S.A.) as well as by the University of Antilles–Guadeloupe (of France) and the Norwegian Geotechnical Institute (NGI).
- 454 The ICG/CARIBE EWS-IV expressed its concern with respect to the mechanisms of communication of warnings. The Honduras earthquake on 28 May 2009 provided an opportunity to test how the different communication mechanisms and systems are working under real conditions. A complete analysis will be performed of that event and afterwards a communications inventory will be developed by Working Group 3 of the ICG/CARIBE EWS.
- 455 The Chairwoman also informed the Assembly of the CDERA Tsunami and Coastal Hazards Warning System Project (TCHWS) which provides support to the ICG/CARIBE EWS, including through a model of tsunami-warning protocols for CARICOM countries; four pilot countries, including Barbados, have been chosen to test these protocols.
- 456 The Chairwoman of ICG/CARIBE EWS also referred to the “Experts Meeting on Preparedness, Readiness and Resilience at the Community Level” (Panama City, 11–13 August 2008), indicating that the ICG had decided to organize, in 2009, a “hands-on” training opportunity in a Member State that has been affected by a tsunami and that has a coastal community preparedness programme in place.

- 457 The U.S.A. welcomed the achievements of the ICG/CARIBE EWS over the past year, but noted that important gaps remained in the observing system. The U.S.A. encouraged other Member States and other stakeholders to join it in making additional investments in the observing and communications network, in accordance with the CARIBE EWS Implementation Plan.
- 458 France confirmed that it will contribute to ICG/CARIBE EWS on preparedness and mitigation aspects through its Programme INTERREG III-B and INTERREG IV-B *Espaces Caraïbes* and that France is willing to participate in and contribute to the activities of the CTIC.
- 459 Venezuela thanked all ICG/CARIBE EWS Member States and the Secretariat for the work done and confirmed the interest of Venezuela in contributing to the establishment of the CARIBE EWS through cooperation with other Member States, independently of who will be hosting CTWC.
- 460 **The Assembly accepted** the Executive Summary Report of ICG/CARIBE EWS and **decided** further action by Resolution XXV-13. (Item 4.5.1)
- 4.5.2.4 *Twenty-Third Session of the IOC Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the Pacific (ICG/PTWS)*
- 461 The re-elected Vice-Chairman of the Intergovernmental Coordination Group of the Pacific Tsunami Warning and Mitigation System (ICG/PTWS), Mr Yohei Hasegawa (Japan), introduced this item. Established as a Subsidiary Body of the Commission by Resolution IV.6, ICG/PTWS reported on its work pursuant to Rule of Procedure 48.3.
- 462 Mr Hasegawa reported on the main results of the 23<sup>rd</sup> Session of the Intergovernmental Coordination Group (ICG/PTWS-XXIII; Apia, Samoa, 16–18 February 2009). The ICG adopted the PTWS Medium-term Strategy and a new PTWS Working Group structure and reviewed the progress on the PTWS Implementation Plan. The PTWS Medium-term Strategy is based on three pillars: (i) Risk Assessment and Reduction — that is, hazard and risk identification and risk reduction; (ii) Detection, Warning and Dissemination — rapid detection and warning dissemination down to the last mile, addressing the requirements of local/national, regional and ocean-wide warning systems; and (iii) Awareness and Response — public education, emergency planning and response. These are underpinned by the following basic elements: Interoperability, which means free, open and functional exchange of tsunami information; Research — to improve and enhance understanding and improve technologies and techniques; Capacity-building — including training and technology transfer; and, in particular, Funding and Sustainability — to provide adequate resources to sustain an effective PTWS.
- 463 The new Working Group structure comprises three Technical Working Groups (WG 1 — Tsunami Risk Assessment and Reduction; WG 2 — Tsunami Detection, Warning and Dissemination; and WG 3 — Tsunami Awareness and Response, and four Regional Working Groups; WG 4 — Central American Pacific Coast; WG 5 — Southeast Pacific Region; WG 6 — Southwest Pacific Region; and WG — South China Sea Region). The ICG also adopted revised Terms of Reference for the PTWS Steering Committee.
- 464 The Vice-Chairman of the ICG drew particular attention to the problem of seismic data exchange in the southwest Pacific (SWP), which will be addressed in the new Regional Working Group for the South-West Pacific, in cooperation with the incumbent of the IOC post in Apia, Samoa. The ICG decided to form a Task Team to assist SWP countries to achieve Seismic Data Sharing (under the Technical Working Group 2). This Task Team will advocate seismic data-sharing in the region, advise SWP countries on technical issues — data exchange protocol, techniques and technologies — and foster cooperation of SWP countries and with donors. He summarized the challenges the PTWS is facing; namely, that: efforts with respect to

risk assessment and risk reduction are still incomplete in some areas; seismic and sea-level data are not always interoperable or made available in a timely manner to the warning centres; and data exchange is still a challenge. He noted that the PTWS needs to maintain an active programme to acquire the new capabilities, which, since 2004, are being developed in other ocean basins. Therefore, the overall focus should be on establishing 24/7 robust national systems, improving the capabilities of national centres to detect and predict tsunamis and improve current capabilities of national warning centres, particularly in Small Island Developing States, to allow timely dissemination of local warnings and advisories (e.g. the 19 March 2009 event).

- 465 At ICG/PTWS-XXIII, the newly elected Chairman, Lieutenant Giorgio de la Torre (Ecuador), presented a first summary of the Exercise PacificWave'08, which was conducted on 28–30 October 2008 to test the preparedness and performance of the entire PTWS. A third such test is planned for the fourth quarter of 2010, with an assumed source in the central South Pacific.
- 466 Mr Yohei Hasegawa (Japan) thanked the PTWS Secretariat and the IOC Tsunami Unit, including ITIC, for supporting this session; he also thanked the participating nations and organizations for earnest discussions. He concluded by applauding IOC's plan to create a new post stationed in the Pacific area and at IOC in Paris and expressed his appreciation for the increased budget for tsunami-related activities. This will significantly increase the support for tsunami disaster prevention work in the Pacific and other oceans and seas.
- 467 The U.S.A. noted that the PTWS is the oldest and arguably the most complex of the TWSs, and appreciated the fact that the ICG has not only completely revised the PTWS working group structure, but that progress has been made by adopting a new strategy and a new implementation plan in principle. This aligns the PTWS with the Global Ocean-related Hazards Warning and Mitigation System. With the new structure, Member States have taken on important new responsibilities for developing local and regional tsunami warning and mitigation through the regional working groups. This is a vital complement to the distant tsunami warning services the U.S.A. provides through the Pacific Tsunami Warning Centre (PTWC) and the services Japan provides through the Northwest Pacific Tsunami Advisory Centre.
- 468 Australia stated that a successfully working PTWS is important for it, through the provision of additional seismic and sea-level information to assist more rapid determination and warning for tsunami threats by the Australian national system, and improved regional tsunami warnings in the southwest Pacific region provided by the PTWC. Australia is pleased that the recent 23<sup>rd</sup> Session of the ICG in Samoa, as well as the Pacific Wave '08 exercise, reported on by the ICG Vice-Chairman, were successful in moving the PTWS towards achieving many of its primary objectives. Two current Australian funding projects are both underpinning regional capacity-development in the southwest Pacific, in support of the PTWS.
- 469 China has developed a framework of a tsunami warning system for the South China Sea, which will be proposed to PTWS through the Chairperson of WESTPAC, in accordance with the decision made by the Sub-Commission for WESTPAC at its 7<sup>th</sup> Session, in May 2008; a set of tsunami forecasting and warning software for the South China Sea is available. China would like to actively promote cooperation and collaboration with countries surrounding the South China Sea, and provide Tsunami Forecasting and Warning Services for the region. China is also interested in hosting the 24<sup>th</sup> Session of ICG/PTWS, and will consult with the Chairperson of ICG/PTWS in this sense.
- 470 Chile indicated that, together with the PTWS South East Pacific Working Group (SEP), it is engaged in an effort of investment in sea-level and seismic monitoring. However, Chile is concerned about the level of free and unrestricted exchange of data and requested the Member States to increase data exchange for tsunami warning purposes. It also thanked the CPPS and the IOC/TSU for supporting the SEP.



471 The Russian Federation reported that it is developing its own national system, including a network of monitoring through automated stations, staff training, and comprehensive exercises with participation of civil defence agencies.

472 **The Assembly accepted** the Executive Summary Report of ICG/PTWS and **decided** further action by Resolution XXV-13. (Item 4.5.1)

## 5. ADMINISTRATION AND MANAGEMENT

### 5.1 REPORT BY THE CHAIRPERSON OF THE FINANCIAL COMMITTEE ON THE IOC DRAFT PROGRAMME AND BUDGET FOR 2010–2011 (DRAFT 35 C/5)

473 The Chairman of the Financial Committee, Dr Neville Smith (Australia), presented the conclusions of the Committee and specifically the fulfilment of its mandate to develop the 2010–2011 biennium Programme and Budget.

474 Dr Smith noted that a number of Member States had raised the matter of French-language interpretation at the initial meeting of the Committee, pointing out the importance of ensuring full engagement of representatives of Member States in the discussion, with, to the extent possible, accommodation of other languages. The Committee had agreed to seek interpretation for its sessions where this was practical.

475 He considered this innovation very successful and that it had led to a stronger and more useful exchange on a number of matters of substance in the Financial Committee. To the extent that such engagement also reduces the need for lengthy debate on details at the Assembly plenary sessions, the Chairman of the Financial Committee believed it can be a cost-effective measure. Noting that the Rules of Procedure remain silent on the matter of language interpretation, and that, in a tight financial environment, all expenditure should be examined on the basis of the value returned, he supported exploring this option at future IOC Assemblies.

476 On the basis of the debate at the present session of the Assembly, the Financial Committee concluded that the implementation of the 2008–2009 programme of work was proceeding in accordance with the adopted IOC Programme and Budget 2008–2009 in the Annex to Resolution XXIV-15, and as updated by the Executive Council at its 41<sup>st</sup> Session (Resolution EC-XLI.5).

477 The four High-Level Objectives of the IOC Medium-term Strategy 2008–2013 (IOC Resolution XXIV-2) are: (HLO 1) Prevention and reduction of the impacts of natural hazards; (HLO 2) Mitigation of the impacts of, and adaptation to, climate change and variability; (HLO 3) Safeguarding the health of ocean ecosystems; and (HLO 4) Management procedures and policies leading to the sustainability of coastal and ocean environment and resources.

478 The Chairman of the Financial Committee recalled the significant work on IOC strategy and plans at the 24<sup>th</sup> Session of the Assembly, leading to a set of priorities that were truly strategic, focused on an appropriate response to the high-level 2008–2013 Medium-term Strategy and to UNESCO and IOC Member State priorities. He further noted the central importance of an operational plan to translate the budget decisions of the Commission into practical actions of the Secretariat.

479 Expected results, performance indicators, and an effective monitoring and evaluation approach should accompany the strategy. Dr Smith noted that a draft of the biennial strategy had been agreed through Resolution EC-XLI.5, drawing on the information provided in document IOC-XXIV/2 Annex 5.

480 In reviewing Annex 3 of the current Action Paper (IOC-XXV/2) and the IOC contribution to the draft UNESCO 35 C/5 Programme and Budget, the Financial Committee noted some

Resolution XXV-13

**GLOBAL COORDINATION OF EARLY WARNING AND MITIGATION SYSTEMS  
FOR TSUNAMIS AND OTHER SEA-LEVEL RELATED HAZARDS**

The Intergovernmental Oceanographic Commission,

A

**Recalling:**

- (i) IOC Resolution XXIV-14, establishing the Working Group on Tsunamis and Other Ocean Hazards Warning and Mitigation Systems (TOWS-WG)
- (ii) IOC Resolution EC-XLI.6 on IOC Intergovernmental Coordination Groups (ICG) for Tsunami Warning and Mitigation Systems for the Pacific Ocean (PTWS), the Indian Ocean (IOTWS), the North-eastern Atlantic, Mediterranean and Connected Seas (NEAMTWS), and the Caribbean and Adjacent Regions (CARIBE-EWS),

**Reaffirming:**

- (i) the role of the coordinated networks of national systems and capacities of IOTWS, CARIBE-EWS, NEAMTWS and PTWS in the development and functioning of a global early warning system for ocean-related hazards
- (ii) that each ICG Member State has responsibility for issuing warnings within its respective territories
- (iii) its commitment to the free and unrestricted exchange of tsunami-relevant real-time observational data in accordance with the IOC Oceanographic Data Exchange Policy and without prejudice to national sovereignty,

**Having considered:**

- (i) the Executive Summary Report of the 6<sup>th</sup> Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (Hyderabad, India, 7–9 April 2009)
- (ii) the Executive Summary Report of the 4<sup>th</sup> Session of the Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (Fort-de-France, Martinique, France, 2–4 June 2009)
- (iii) the Executive Summary Report of the 5<sup>th</sup> Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean and Connected Seas (Athens, Greece, 3–5 November 2008)
- (iv) the Executive Summary Report of the 23<sup>rd</sup> Session of the Intergovernmental Coordination Group for the Pacific Ocean Tsunami Warning and Mitigation System (Apia, Samoa, 16–18 February 2009),

**Endorses** the above-mentioned Executive Summary reports;

**Requests** the IOC Executive Secretary to support the implementation of the actions specified therein, as appropriate;

**Recognizes** with great concern the problem of vandalism of tsunameters and other tsunami detection equipment, which seriously undermines efforts to establish national and regional tsunami warning and mitigation systems, as well as the Global Ocean-related Hazards Warning and Mitigation System (GOHWMS);

**Calls on** Member States to make a concerted effort to eradicate vandalism;

**Encourages** Member States bordering ocean and seas not covered by existing Tsunami Warning Systems, as appropriate, to actively promote the development, establishment and sustained operation of national and sub-regional Tsunami Warning and Mitigation Systems within a global framework to address tsunamis and other sea-level-related hazards;

**Urges** IOC Member States that have not yet done so to nominate a 24/7 Tsunami Warning Focal Point (TWFP).

B

**Having noted** the Summary Report of the 2<sup>nd</sup> Session of the TOWS-WG (Paris, 27 March 2009) and the Initial Draft Strategy and Plan 2009–2010 for a GOHWMS Framework and implementation of TOWS-WG recommendations,

**Endorses** the above mentioned report;

**Requests the IOC Executive Secretary** to support the implementation of the actions therein, as appropriate, and as described below.

C

**Reaffirming** the global coordinating role of TOWS-WG to develop strategies and follow-up activities to address sea-level-related hazards in collaboration with relevant bodies,

**Recalling** the need to support the implementation of the GOHWMS through a strategy and plan,

**Emphasizing** the priority attached to the collection and exchange of sea-level data for tsunami warning purposes,

**Underlining** the need for high-resolution bathymetric data in coastal areas and for digital elevation models for tsunami warning and forecast operations,

**Confirming** the need for common requirements for Regional Tsunami Watch Providers of the Tsunami Warning and Mitigation Systems, while recognizing that their unique regional conditions may require tailored approaches,

**Recognizing** the expected benefits deriving from the exchange of knowledge and information, including new research and technological developments, among the ICGs and coordination among their working groups,

**Decides to:**

- (i) extend the TOWS-WG for a further intersessional period, with the same mandate and membership
- (ii) establish an Inter-ICG Task Team on Sea Level for Tsunami Purposes, the Terms of Reference for which are in Annex A to this Resolution

- (iii) establish an Inter-ICG Task Team on Disaster Management and Preparedness, the Terms of Reference for which are in Annex B to this Resolution
- (iv) establish an Inter-ICG Task Team on Tsunami Watch Operations, the Terms of Reference for which are shown in Annex C to this Resolution;

**Requests** the IOC Executive Secretary to:

- (i) propose to GLOSS and DBCP, in consultation with JCOMM, that requirements for the collection and exchange of sea-level data for operational tsunami warning purposes be included in their terms of reference and work programmes
- (ii) raise the issue of vandalism of tsunameters and other ocean observing platforms with the UN General Assembly and request the Secretary-General to include vandalism as an agenda item for discussion of ocean issues within an appropriate mechanism or body
- (iii) consult the ICG Chairpersons on high-priority science issues in the development of early warning and mitigation systems for tsunamis and other sea-level-related hazards and define contributions from IOC programmes and scientific and technical subsidiary bodies in the context of the Programme and Budget for 2010–2011
- (iv) consult with the relevant seismic networks with a view to providing seismic data to Regional Tsunami Watch Providers and National Tsunami Warning Centres and for the coordination of related matters
- (v) consult with the operators of relevant seismic networks on options for promoting improved exchange and standardization of real-time seismic data and coordination of training programmes for global seismic monitoring
- (vi) facilitate the exchange and review of documents and guidelines related to risk assessment methodologies developed by the ICGs
- (vii) urgently develop a website that, at a minimum, provides Member States with:
  - access to contact information for Tsunami National Contacts and Tsunami Warning Focal Points, as appropriate, and respecting the restrictive nature of such information
  - a mechanism to publish and access documents and information of relevance to the international tsunami community, including official ICG documents, such as meeting reports and technical memoranda;

**Requests** thTOWS-WG to:

- (i) develop a document with definitions and terminology on hazards, disasters, vulnerability and risks, drawing on existing documents developed by bodies like UN/ISDR, for consideration by the IOC Executive Council at its 43<sup>rd</sup> Session, in 2010
- (ii) prepare with the ICG Chairpersons a report on whether adjustments to the IOC Oceanographic Data Exchange Policy (adopted by IOC Resolution XXII-6) are needed or not, given the unique requirements of tsunami warning systems, and suggest the effective implementation of the IOC Oceanographic Data Exchange Policy, to ensure the open and free sharing of tsunami-relevant observational data needed for timely and effective ocean-related hazard detection, analysis and warning

for coastal communities, for consideration by the IOC Assembly at its 26<sup>th</sup> Session, in 2011;

**Instructs** the International Tsunameter Partnership and the DBCP, in coordination with JCOMM, to prepare a report for the TOWS-WG and I-GOOS, at their next meetings, on ocean observing platform vandalism, including:

- (i) an inventory and assessment of the problem of ocean observing platform vandalism globally
- (ii) an assessment of the impacts of such vandalism, including on the functionality of tsunami warning systems
- (iii) the annual cost of ocean observing platform vandalism to Member States
- (iv) recommendations for IOC and Member State action;

**Requests** GEBCO to give priority to the development of high-resolution bathymetric data in coastal areas and of digital elevation models and to report progress to the IOC Executive Council at its 43<sup>rd</sup> Session;

**Further requests** the IOC Regional Ocean Mapping projects to contribute to GEBCO to achieve these developments.

#### Annex A to Resolution XXV-13

##### **Terms of Reference of the Inter-ICG Task Team on Sea Level for Tsunami Purposes**

The Inter-ICG Task Team on Sea Level for Tsunami Purposes, based on the relevant working groups within the ICGs, and in coordination with the GLOSS Group of Experts, shall:

- (i) develop requirements for tsunami warning system sea-level data, and all characteristics of the data stream, including networks and network design, for the information of relevant implementation groups, such as GLOSS, the ICG working groups and national sea-level authorities
- (ii) review the provision and availability of sea-level data as they pertain to tsunami warning systems and provide advice, as appropriate, to GLOSS and the ICGs
- (iii) provide a focus for sea-level issues amongst ICGs
- (iv) provide a report to TOWS-WG in advance of its 3<sup>rd</sup> Meeting, in 2010.

The representatives to the Inter-ICG Task Team on Sea Level for Tsunami Purposes shall be nominated by their respective ICG Chairpersons in consultation with the Chairperson of the GLOSS-GE, who will also appoint the Chairperson of the Task Team.

Annex B to Resolution XXV-13

**Terms of Reference of the Inter-ICG Task Team  
on Disaster Management and Preparedness**

The Inter-ICG Task Team on Disaster Management and Preparedness, based on the relevant working groups within the ICGs, shall:

- (i) facilitate, in collaboration with relevant organizations, such as UN/ISDR, the exchange of experience and information on preparedness actions, education/awareness-raising campaigns and other matters related to disaster management and preparedness
- (ii) elaborate proposals for a global or regional tsunami awareness day, possibly connected with the International Day for Disaster Reduction (8 October)
- (iii) promote preparedness in coastal communities through education and awareness-raising products and campaigns
- (iv) replicate preparedness programmes and assessment tools that have been successful in one regional Tsunami Warning and Mitigation System in the others, as appropriate
- (v) provide a report to TOWS-WG in advance of its 3<sup>rd</sup> Meeting, in 2010.

The representatives to the Inter-ICG Task Team on Disaster Management and Preparedness shall be nominated by their respective ICG Chairpersons and appointed by the IOC Chairperson, who will also appoint the Chairperson of the Task Team.

Annex C to Resolution XXV-13

**Terms of Reference of the Inter-ICG Task Team on Tsunami Watch Operations**

The Inter-ICG Task Team on Tsunami Watch Operations shall:

- (i) provide a mechanism to the ICGs for coordination of tsunami watch operations among the Tsunami Warning Systems
- (ii) document current and proposed products and their dissemination methods, working through existing ICG working groups or their equivalents
- (iii) review terminology and recommend harmonized terminology
- (iv) document areas of responsibility, geographical coverage, system architectures and other relevant characteristics
- (v) develop consensus on uniform standards, procedures and guidelines for tsunami watch operations, including a process for verifying the operational status of Regional Tsunami Watch Providers
- (vi) develop guidelines for the review of tsunami watch operations
- (vii) provide a report to TOWS-WG in advance of its 3<sup>rd</sup> Meeting, in 2010.

The representatives to the Inter-ICG Task Team on Tsunami Watch Operations shall be nominated by their respective ICG Chairpersons and appointed by the IOC Chairperson, who will also appoint the Chairperson of the Task Team.

#### Resolution XXV-14

### **IOC PROGRAMME AND BUDGET FOR 2010–2011**

The Intergovernmental Oceanographic Commission,

**Recalling** Article 1.2 and Article 10.1 of the IOC Statutes,

**Noting** the report of the IOC Executive Secretary on Programme Implementation for the 2008–2009 biennium, contained in Document IOC-XXV/2 Annex 2,

**Further noting** the presentation of the IOC Draft Programme and Budget 2010–2011, contained in Document IOC-XXV/2 Annex 3,

**Emphasizing** the unique role of the IOC as the competent intergovernmental body dealing with ocean science and ocean services within the United Nations system, particularly as the ocean arm of UNESCO, operating through the concerted action of IOC Member States,

**Also noting:**

- (i) the Programme-based approach emphasized in the 34 C/4 Medium-term Strategy 2008–2013 and the use of biennial sectoral priorities within the draft 35 C/5 Programme and Budget 2010–2011 and resulting orientation of that approach around a single Main Line of Action for IOC activities
- (ii) the increased responsibilities of IOC for the 2008–2009 biennium, including (a) climate change and impacts and adaptation strategies for coastal regions, specifically for the benefit of Africa, Small Island Developing States and Least-Developed Countries, (b) risks posed by tsunamis, (c) the prevention and mitigation of natural hazards, and (d) the Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-Economics Aspects
- (iii) the role IOC plays in the technical coordination with other UN Specialized Agencies and Organizations, particularly in the area of climate change,

**Having considered** the proposals regarding the structure, formulation and budgetary framework for the 2010–2011 biennium contained in the UNESCO Draft 35 C/5 Programme and Budget and the proposal for zero real growth,

**Recognizing** the important role polar ocean processes play in the global climate system, as described in the Intergovernmental Panel for Climate Change Fourth Assessment Report,

**Noting** the ministerial declaration on the International Polar Year (IPY) and Polar Science adopted by the Antarctic Treaty – Arctic Council joint meeting (Washington, April 2009), which called for a number of actions in support of the IPY legacy, including strengthening international collaboration at all levels in polar regions,

**Further noting** the Tromsø Declaration of the Arctic Council on 29 April 2009 which welcomed commitments to deliver a lasting legacy from the IPY, and decided to consider the proposal to organize an International Polar Decade,

**Emphasizing** that any reduction of the regular budget allocations from UNESCO to IOC in real terms, and considered in the light of proposed requirements and expected results, which are growing in those same terms, would lead to corresponding reductions in the current programmes and activities of the Commission, especially the extension of regional programmes,

**Recalling** the need to give priority to Africa, Small Island Developing States and gender equality,

**Stressing** the importance of:

- (i) the regular funds provided by UNESCO, and support from Member States, notably through contributions to the IOC Special Account, and secondment of personnel
- (ii) the continuing and growing support by Member States in addressing the plans and work of IOC, through voluntary extrabudgetary and in-kind contributions,

**Decides** that the IOC Programme and Budget 2010–2011 shall be aligned with the High-Level Objectives of the Biennial Strategy and the actions detailed within that Strategy, as annexed to this Resolution;

**Requests** the IOC Executive Secretary to strengthen the collaboration of IOC with polar organizations under the climate change priority and provide a report to the Executive Council at its 43<sup>rd</sup> Session, for further consideration within the biennial strategy;

**Adopts** the Draft IOC Programme and Budget 2010–2011 in the Annex to this Resolution;

**Recognizes** the need to maintain, as a principle, and as introduced into the UNESCO Draft Resolution on Programme and Budget 2010–2011, that the IOC budget should not be decreased by transfers of funds to other parts of the UNESCO budget;

**Requests** the IOC Executive Secretary:

- (i) to bring this need to the attention of the UNESCO Director-General in the preparation of the 35<sup>th</sup> General Conference of UNESCO
- (ii) to communicate the UNESCO Programme and Budget (2010–2011), as approved by the UNESCO's General Conference, to IOC Member States, together with an analysis of implications for the IOC Programmes
- (iii) to reflect the priority to Africa, Small Island Developing States and gender equality by allocating sufficient resources in the operational plans of the Secretariat for 2010–2011, and report to the 43<sup>rd</sup> Session of the Executive Council;

**Urges** Member States:

- (i) to support the IOC programme proposals when the Draft 35 C/5 is being considered by the UNESCO Executive Board and the General Conference
- (ii) to continue and increase their support to the IOC through direct and in-kind contributions;

**Authorizes** the Executive Council, at its 43<sup>rd</sup> Session:



- (i) to produce a draft Biennial Strategy for the 2012–2013 biennium and to review the approved budget under 35 C/5 and the operational plans of the Secretariat for 2010–2011
- (ii) to consider adjustments to the Medium-term Strategy and possible budgetary implications and to review the Programme and Budget adopted in this Resolution.

Annex 1 to Resolution XXV-14

**IOC Biennial Strategy 2010–2011**

**THE ALIGNMENT OF IOC WITH UNESCO GLOBAL PRIORITIES**

***Global Priority Africa***

UNESCO has defined its priorities based on common challenges collectively faced by the international community and has therefore placed priority status on Africa in order for African nations to effectively and efficiently contribute in meeting these global challenges.

The current Medium-term Strategy (34 C/4) extends and reinforces the existing priority afforded to Africa in UNESCO governing policy and was reiterated by Member States during previous UNESCO General Conferences and IOC Assembly and Executive Council sessions supported by African-focused Resolutions.

The reinforcement of African priority within IOC is still pertinent given the fact that the execution of IOC programmes in Africa has shown insufficient results and impacts.

It is therefore crucial that adequate resources be allocated with sufficient and increasing budget and personnel across all IOC programmes, in order to achieve their successful implementation based on a result-management approach with clearly defined unambiguous performance indicators.

Particular attention should be given to institutional empowerment (existing relevant institutions, policies, curriculum development), scientific, technological and research infrastructure reinforcement, use and reinforcements of local and regional competences, fund-raising for joint research and development programmes based on grass-roots, ownership and leadership of local institutions.

***Gender Equality***

UNESCO has also identified a global priority for gender equality and specifically advocates actions that promote the design, implementation and evaluation of gender responsive science and technology policies. Expected results include capacities built for mitigation of natural disasters, with particular attention to gender parity and youth, through networking, partnerships and policy support.

***Small Island Developing States***

UNESCO has agreed to focus efforts on Least-Developed Countries and Small Island Developing States (LDCs and SIDS, respectively), with specific reference to the framework of the implementation of the Barbados+10 Action Plan and the Mauritius Strategy.

Through IOC's decentralized resources, including for the SIDS of the Indian-Australian-SE Asian and SW Pacific oceanic regions, expected results include input for downscaled understanding and predictive tools that address coastal areas of local interest to SIDS, capacity-building through the development and delivery of ocean and climate curricula, and

training workshops to build capacity in climate change phenomena, impacts and adaptation strategies.

### **HIGH-LEVEL OBJECTIVES**

Responding to its mission in this context and guided by the strategic thrusts, described above, of the IOC Medium-term Strategy, and noting the role of IOC as the competent body and focal point for ocean matters in the UN system, responding concretely in its mandated areas of activity to the Johannesburg Plan of Implementation, the UN Millennium Development Goals, and acting in conformity with international law, including relevant UN Conventions, and with UN General Assembly Resolutions, the IOC, through its Medium-term Strategy 2008–2013 and Biennial Strategy for 2010–2011, will address the following High-level Objectives:

**High-level objective 1 – Prevention and reduction of the impacts of natural hazards**

Recognizing the IOC's role, for over four decades, of coordinating the Pacific Tsunami Warning System, the United Nations has mandated the IOC as the lead agency for coordinating the planning and implementation of tsunami early warning and mitigation systems. Following the rapid progress in installing the Indian Ocean Tsunami Early Warning and Mitigation System, the IOC has expanded its action to other regions (North-eastern Atlantic and Mediterranean; Caribbean) and is contributing with other UN agencies to the development of a global system for addressing multiple marine hazards, thus supporting the overall objective of contributing to disaster preparedness, mitigation and recovery. Particular attention is being focused on coastal erosion and inundation in the wake of the 2008 Myanmar storm-surge tragedy.

Actions	Expected results	Performance indicators
1a. Promote integrated and sustained monitoring and warning systems for coastal and oceanic natural hazards, in close coordination with other relevant intergovernmental organizations, where appropriate, using enhanced coastal and ocean networks, including education and training activities.	Risks from tsunami and other ocean and coastal-related hazards reduced.	<ul style="list-style-type: none"> <li>- Intergovernmental coordination improved</li> <li>- Regional broadband seismic monitoring and sea-level stations consolidated.</li> <li>- Number of National Warning Centres identified or implemented under national laws.</li> </ul>
1b. Educate communities at risk with respect to natural hazards impact prevention, preparedness and mitigation measures.	Enhanced awareness and capacities to plan coastal activities against hazards, including coastal erosion.	<ul style="list-style-type: none"> <li>- Plans developed for risk assessment and hazard mitigation integrated into coastal planning and management at the national level.</li> </ul>

**High-level objective 2 – Mitigation of the impacts of and adaptation to climate change and variability**

IOC will continue its role as an intergovernmental advocate, coordinator, and partner in international scientific research to improve the understanding of the Earth System, by contributing to the improvement of prediction of climate and its effects on marine ecosystems and resources through sustained ocean observation and process studies at regional and global scales and by contributing to the development of science applications to mitigate the effects of climate change, including sea-level rise.

Actions	Expected results	Performance indicators
2a. Increase the understanding of the ocean's role in climate variability and climate change.	<p>Participation of the ocean research community promoted and catalysed, and their cutting-edge results integrated into international climate and polar research.</p> <p>Increased involvement in polar climate programmes.</p>	<ul style="list-style-type: none"> <li>– Degree of engagement and contribution of the oceanographic scientific community in activities of the WCRP and other international programmes.</li> <li>– Knowledge gaps about sea-level change better addressed through targeted observations and research.</li> <li>– Improvement of El Niño predictions and mitigation of its impacts at regional and global levels.</li> <li>– Number of IOC co-sponsored programmes.</li> </ul>
2b. Contribute to the better prediction of climate through ocean observations and process studies, at regional and global scales.	<p>Ocean observing systems and data exchange standards enhanced.</p> <p>Improved ocean-related climate modelling capability.</p>	<ul style="list-style-type: none"> <li>- Degree of implementation of the Global Ocean Observing System.</li> <li>- Global participation of oceanographic data and information centres in the web-based Ocean Data Portal and OceanDocs data and knowledge systems.</li> <li>- Initiatives taken to enhance polar observations.</li> <li>- Successful 3<sup>rd</sup> session of JCOMM.</li> <li>- Number of coupled climate models in IPCC AR5 that are verified with Argo information.</li> </ul>
2c. Increase the understanding of the impacts of climate change and variability on marine ecosystems and their living resources.	<p>The impacts of climate change on marine ecosystems and their living marine resources at the global and regional level is addressed.</p> <p>Increased collaboration between IOC and polar organizations.</p>	<ul style="list-style-type: none"> <li>- International cooperation to improve understanding of ocean acidification and its impacts on marine ecosystems sustained and enhanced.</li> <li>- Regular global assessment of the status of coral reefs of the world (every two years), including climate impacts as well as human impacts.</li> <li>- Number of collaborative agreements in place.</li> </ul>

Actions	Expected results	Performance indicators
2d. Climate change adaptation for Africa and SIDS.	Enhanced capacity in observing climate change phenomena, assess impacts and implement adaptation strategies.	- Publicly accessible knowledge base and clearing house on climate change established.

### ***IOC High-level objective 3 – Safeguarding the health of ocean ecosystems***

IOC will leverage the science and capacity to monitor and safeguard the health of ocean ecosystems and services, by addressing the conservation and sustainable management of coastal resources and marine biodiversity. In this regard, IOC will continue harmonizing its capacity-development activities according to long-term capacity-development principles that improve the ability of Member States to apply sound scientific methods to the sustainable management of their resources.

Actions	Expected results	Performance indicators
3a. Actively contribute to the “Regular Process for Global Reporting and Assessment of the State of the Marine Environment, including Socio-economic Aspects”.	First Global Assessment initiated under the Regular Process on the Global Reporting on the State of the Marine Environment.	- UNGA Resolution defining mandate and method of work of First Global Marine Assessment.
3b. Further develop the research and monitoring required for the prevention of marine environment degradation, and the maintenance of biodiversity and the sustainable use of marine habitats.	Enhanced coordination of research on ocean ecosystems, marine habitats and biodiversity and best practices promoted in the management of marine and coastal ecosystems and related strengthening of the regional programmes and subsidiary bodies.	<ul style="list-style-type: none"> <li>- Improved tools and enhanced capacity to predict and mitigate global environmental risks, such as anthropogenic nutrient loading and harmful algae, for marine biodiversity and ecosystem health.</li> <li>- Coastal research, monitoring and related management enhanced through a network of coastal sites.</li> <li>- Research results and guidelines applied in policies and management of coastal and marine ecosystems at national or regional level.</li> </ul>

Actions	Expected results	Performance indicators
3c. Identify and develop the capacity-development necessary for maintenance of healthy ocean ecosystems, focusing on the regional needs.	Enhanced capacity related to the maintenance of ecosystems and related strengthening of the regional programme and subsidiary bodies.	<ul style="list-style-type: none"> <li>- Status of existing integrated cooperative regional frameworks focusing on regional capacity-development and regional collaboration.</li> <li>- New regional frameworks focusing on regional capacity-development and regional collaboration developed.</li> <li>- Status of marine scientific research conducted by consolidated institutional capacities in eastern, western and central Africa and Latin America.</li> <li>- Pilot projects promoted by UNESCO Chairs on educational aspects in developing regions.</li> </ul>
3d. Maintain an ocean biogeographic information system in support of marine assessments and ecosystem research.	OBIS established within IOC.	<ul style="list-style-type: none"> <li>- Administrative arrangements for IOC/OBIS in place.</li> <li>- Draft agreement for IOC Project Office for OBIS in place.</li> <li>- Terms of Reference for associated Groups of Experts established.</li> </ul>

**IOC High-level objective 4 – Management procedures and policies leading to the sustainability of coastal and ocean environment and resources**

IOC will assist Member States, at their request, in the management of their marine and coastal environment, focusing on regional needs and developing national capabilities, by translating research results into management approaches and wise practices, through spatial and other planning approaches demonstrated through pilot projects in target regions, by providing the necessary training and assistance to implement them and by strengthening IOC Regional Subsidiary Bodies to fully ensure the regional implementation of the IOC Medium-term Strategy 2008–2013. A number of specific actions arising from the consideration of the Future of IOC and the celebration of the 50th anniversary of IOC will be undertaken to strengthen the operation of the IOC and its governance and to raise awareness of, and involvement in, IOC's programme of action.

Actions	Expected results	Performance indicators
4a. Enhance regional cooperation and involvement of the Member States through capacity-building and transfer of technology and measures to strengthen the capabilities of the IOC Regional Subsidiary Bodies and IOC decentralized offices.	Member State requests for policy and capacity-development responded to by integrating knowledge and experience available from all relevant IOC programmes.	<ul style="list-style-type: none"> <li>- Programme and capacity-development implementation coordinated.</li> <li>- Regional and national activities better coordinated.</li> <li>- Intergovernmental actions enhanced.</li> </ul>
4b. Facilitate science related to ocean and coastal resource management.	Science-based applications and policies to adapt to climate and coastal change developed.	<ul style="list-style-type: none"> <li>- Number of adaptation measures (policy and technical) implemented in identified pilot areas.</li> <li>- Approaches to link freshwater management with coastal management developed.</li> <li>- Number of integrated river basins and coastal groundwater management strategies developed at country level.</li> </ul>
4c. Enhance development and implementation of decision-support tools that improve integrated ocean and coastal management.	<p>ICAM indicators framework in selected regions applied through pilot projects.</p> <p>Marine and coastal spatial planning methodologies developed.</p>	<ul style="list-style-type: none"> <li>- Number of countries having completed indicator-based "state of coastal resources" reports.</li> <li>- Number of coastal areas where pilot projects for marine zoning plans have been developed.</li> <li>- Adaption strategies to manage coastal changes in West Africa provided.</li> </ul>
4d. Facilitate the development and adoption of standards.	The TEOS-10 formulation of the Thermodynamics and Equation of State of Seawater is adopted.	<ul style="list-style-type: none"> <li>- Effective publication and dissemination of the TEOS-10 standard, in all four working languages of the Commission.</li> <li>- An implementation plan to allow a traceable, stepwise implementation of the new TEOS-10 standard.</li> </ul>

Annex 2 to Resolution 14

**Draft IOC Programme and Budget 2010–2011**

*(see next page)*



Draft IOC Programme and Budget 2010–2011			Proposed RP budget 2010-11 (Draft 35 C/5)		Difference compared to 2008-09	2010-11 EXB*
PART	Activities	Staff	Total			
		\$	\$	\$		\$
<b>PRIORITY 1</b>						
<b>2. Mitigation of and adaptation to climate change &amp; variability</b>						
2.a Increase the understanding of the ocean's role in climate change & variability	239 770	94 880	334 650	4 650		
2.b Climate prediction through observations and process studies, at regional and global scales	598 300	1 802 860	2 401 160	-127 030	2 350 000	
2.c Increase the understanding of the impacts of climate change & variability on marine ecosystems & their living resources	55 210	142 300	197 510	-35 080	191 535	
2.d Climate change adaptation for Africa and SIDS	110 000	57 600	167 600	167 600		
<b>TOTAL PRIORITY 1</b>	<b>1 003 280</b>	<b>2 097 640</b>	<b>3 100 920</b>	<b>10 140</b>	<b>2 541 535</b>	
<b>PRIORITY 2</b>						
<b>A. PROGRAMMES</b>						
<b>1. Prevention &amp; reduction of the impacts of natural hazards</b>						
1.a Promote integrated and sustained monitoring and warning systems	269 380	294 880	564 260	257 860	1 500 000	
1.b Educating communities at risk with respect to natural hazards impact prevention, preparedness & mitigation measures	75 650		75 650	35 650		
<b>Total 1</b>	<b>345 030</b>	<b>294 880</b>	<b>639 910</b>	<b>293 510</b>	<b>1 500 000</b>	
<b>3. Safeguarding the health of ocean ecosystems</b>						
3.a Regular Process for Global Reporting and Assessment of the State of the Marine Environment	148 000	111 370	259 370	82 490	50 000	
3.b Research & monitoring for the prevention of marine environmental degradation	66 870	181 000	247 870	61 130	100 000	
3.c Capacity-development necessary for maintenance of healthy ocean ecosystems focusing on the regional needs	425 270	1 004 920	1 430 190	20 230	3 151 065	
3.d Ocean biogeographic information system in support of marine assessment and ecosystem research	10 000	98 650	108 650	108 650		
<b>Total 3</b>	<b>650 140</b>	<b>1 395 940</b>	<b>2 046 080</b>	<b>272 500</b>	<b>3 301 065</b>	
<b>4. Management procedures and policies leading to the sustainability of coastal &amp; ocean environment &amp; resources</b>						
4.a Regional cooperation through capacity-building and transfer of technology & measures to strengthen IOC RSBs	178 370	468 510	646 880	189 350	150 000	
4.b Science for ocean and coastal resource management	117 560	186 680	304 240	-3 410	50 000	
4.c Decision-support tools for improved integrated ocean and coastal management	139 750	264 420	404 170	-31 130	941 000	
4.d Facilitate the development and adoption of standards	10 000	16 830	26 830	26 830		
<b>Total 4</b>	<b>445 680</b>	<b>936 440</b>	<b>1 382 120</b>	<b>181 640</b>	<b>1 141 000</b>	
<b>Sub-total Priority 2 A</b>	<b>1 440 850</b>	<b>2 627 260</b>	<b>4 068 110</b>	<b>747 650</b>	<b>5 942 065</b>	
<b>B. GOVERNANCE</b>						
<b>I. Governing bodies</b>						
1. Assembly	191 100		191 100	-8 900		
2. Executive Council	106 700		106 700	-58 300		
<b>Total B.I</b>	<b>297 800</b>		<b>297 800</b>	<b>-67 200</b>		
<b>II. Coordination and consultations</b>						
<b>Participation in UN consultations and cooperation with UN agencies</b>						
1. UNCLOS and other UN conventions	23 880	82 740	106 620	-13 380	100 000	
<b>Coordination</b>						
2. Executive Secretary's travel	23 900		23 900	-26 100		
3. Office of the Executive Secretary	37 450	1 246 160	1 283 610	-95 250	100 000	
4. External relations and cooperation	23 880		23 880	-16 120		
.....5. Publications (& related costs)	28 660		28 660	-2 940		
<b>Total B.II</b>	<b>137 770</b>	<b>1 328 900</b>	<b>1 466 670</b>	<b>-153 790</b>	<b>200 000</b>	
<b>Sub-total Priority 2 B</b>	<b>435 570</b>	<b>1 328 900</b>	<b>1 764 470</b>	<b>-220 990</b>	<b>200 000</b>	
<b>TOTAL PRIORITY 2</b>	<b>1 876 420</b>	<b>3 956 160</b>	<b>5 832 580</b>	<b>526 660</b>	<b>6 142 065</b>	
<b>TOTAL PRIORITIES 1 AND 2</b>	<b>2 879 700</b>	<b>6 053 800</b>	<b>8 933 500</b>	<b>536 800</b>	<b>8 683 600</b>	
<b>IOC share of MPII common projects &amp; costs</b>	<b>622 100</b>			<b>-7 400</b>		
<b>GRAND TOTAL</b>	<b>3 501 800</b>	<b>6 053 800</b>	<b>9 555 600</b>	<b>529 400</b>	<b>8 683 600</b>	

\*Funds already received or firmly committed

In this Series	Languages
<b>Reports of Governing and Major Subsidiary Bodies</b> , which was initiated at the beginning of 1984, the reports of the following meetings have already been issued:	
1. Eleventh Session of the Working Committee on international Oceanographic Data Exchange	E, F, S, R
2. Seventeenth Session of the Executive Council	E, F, S, R, Ar
3. Fourth Session of the Working Committee for Training, Education and Mutual Assistance	E, F, S, R
4. Fifth Session of the Working Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S, R
5. First Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions	E, F, S
6. Third Session of the <i>ad hoc</i> Task team to Study the Implications, for the Commission, of the UN Convention on the Law of the Sea and the New Ocean Regime	E, F, S, R
7. First Session of the Programme Group on Ocean Processes and Climate	E, F, S, R
8. Eighteenth Session of the Executive Council	E, F, S, R, Ar
9. Thirteenth Session of the Assembly	E, F, S, R, Ar
10. Tenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific	
11. Nineteenth Session of the Executive Council, Paris, 1986	E, F, S, R, Ar
12. Sixth Session of the IOC Scientific Committee for the Global Investigation of Pollution in the Marine Environment	E, F, S
13. Twelfth Session of the IOC Working Committee on International Oceanographic Data Exchange	E, F, S, R
14. Second Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, Havana, 1986	E, F, S
15. First Session of the IOC Regional Committee for the Central Eastern Atlantic, Praia, 1987	E, F, S
16. Second Session of the IOC Programme Group on Ocean Processes and Climate	E, F, S
17. Twentieth Session of the Executive Council, Paris, 1987	E, F, S, R, Ar
18. Fourteenth Session of the Assembly, Paris, 1987	E, F, S, R, Ar
19. Fifth Session of the IOC Regional Committee for the Southern Ocean	E, F, S, R
20. Eleventh Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Beijing, 1987	E, F, S, R
21. Second Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Arusha, 1987	E, F
22. Fourth Session of the IOC Regional Committee for the Western Pacific, Bangkok, 1987	E only
23. Twenty-first Session of the Executive Council, Paris, 1988	E, F, S, R
24. Twenty-second Session of the Executive Council, Paris, 1989	E, F, S, R
25. Fifteenth Session of the Assembly, Paris, 1989	E, F, S, R
26. Third Session of the IOC Committee on Ocean Processes and Climate, Paris, 1989	E, F, S, R
27. Twelfth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Novosibirski, 1989	E, F, S, R
28. Third Session of the Sub-Commission for the Caribbean and Adjacent Regions, Caracas, 1989	E, S
29. First Session of the IOC Sub-Commission for the Western Pacific, Hangzhou, 1990	E only
30. Fifth Session of the IOC Regional Committee for the Western Pacific, Hangzhou, 1990	E only
31. Twenty-third Session of the Executive Council, Paris, 1990	E, F, S, R
32. Thirteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, New York, 1990	E only
33. Seventh Session of the IOC Committee for the Global Investigation of Pollution in the Marine Environment, Paris, 1991	E, F, S, R
34. Fifth Session of the IOC Committee for Training, Education and Mutual Assistance in Marine Sciences, Paris, 1991	E, F, S, R
35. Fourth Session of the IOC Committee on Ocean Processes and Climate, Paris, 1991	E, F, S, R
36. Twenty-fourth Session of the Executive Council, Paris, 1991	E, F, S, R
37. Sixteenth Session of the Assembly, Paris, 1991	E, F, S, R, Ar
38. Thirteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Baja California, 1991	E, F, S, R
39. Second Session of the IOC-WMO Intergovernmental WOCE Panel, Paris, 1992	E only
40. Twenty-fifth Session of the Executive Council, Paris, 1992	E, F, S, R
41. Fifth Session of the IOC Committee on Ocean Processes and Climate, Paris, 1992	E, F, S, R
42. Second Session of the IOC Regional Committee for the Central Eastern Atlantic, Lagos, 1990	E, F
43. First Session of the Joint IOC-UNEP Intergovernmental Panel for the Global Investigation of Pollution in the Marine Environment, Paris, 1992	E, F, S, R
44. First Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms, Paris, 1992	E, F, S
45. Fourteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Paris, 1992	E, F, S, R
46. Third Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Vascoas, 1992	E, F
47. Second Session of the IOC Sub-Commission for the Western Pacific, Bangkok, 1993	E only
48. Fourth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, Veracruz, 1992	E, S
49. Third Session of the IOC Regional Committee for the Central Eastern Atlantic, Dakar, 1993	E, F
50. First Session of the IOC Committee for the Global Ocean Observing System, Paris, 1993	E, F, S, R
51. Twenty-sixth Session of the Executive Council, Paris, 1993	E, F, S, R
52. Seventeenth Session of the Assembly, Paris, 1993	E, F, S, R
53. Fourteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Tokyo, 1993	E, F, S, R
54. Second Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms, Paris, 1993	E, F, S
55. Twenty-seventh Session of the Executive Council, Paris, 1994	E, F, S, R
56. First Planning Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Melbourne, 1994	E, F, S, R
57. Eighth Session of the IOC-UNEP-IMO Committee for the Global Investigation of Pollution in the Marine Environment, San José, Costa Rica, 1994	E, F, S
58. Twenty-eighth Session of the Executive Council, Paris, 1995	E, F, S, R
59. Eighteenth Session of the Assembly, Paris, 1995	E, F, S, R
60. Second Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1995	E, F, S, R

61.	Third Session of the IOC-WMO Intergovernmental WOCE Panel, Paris, 1995	E only
62.	Fifteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Papete, 1995	E, F, S, R
63.	Third Session of the IOC-FAO Intergovernmental Panel on Harmful Algal Blooms, Paris, 1995	E, F, S
64.	Fifteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange	E, F, S, R
65.	Second Planning Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1995	E only
66.	Third Session of the IOC Sub-Commission for the Western Pacific, Tokyo, 1996	E only
67.	Fifth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, Christ Church, 1995	E, S
68.	Intergovernmental Meeting on the IOC Black Sea Regional Programme in Marine Sciences and Services	E, R
69.	Fourth Session of the IOC Regional Committee for the Central Eastern Atlantic, Las Palmas, 1995	E, F, S
70.	Twenty-ninth Session of the Executive Council, Paris, 1996	E, F, S, R
71.	Sixth Session for the IOC Regional Committee for the Southern Ocean and the First Southern Ocean Forum, Bremerhaven, 1996	E, F, S,
72.	IOC Black Sea Regional Committee, First Session, Varna, 1996	E, R
73.	IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Fourth Session, Mombasa, 1997	E, F
74.	Nineteenth Session of the Assembly, Paris, 1997	E, F, S, R
75.	Third Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1997	E, F, S, R
76.	Thirtieth Session of the Executive Council, Paris, 1997	E, F, S, R
77.	Second Session of the IOC Regional Committee for the Central Indian Ocean, Goa, 1996	E only
78.	Sixteenth Session of the International Co-ordination Group for the Tsunami Warning System in the Pacific, Lima, 1997	E, F, S, R
79.	Thirty-first Session of the Executive Council, Paris, 1998	E, F, S, R
80.	Thirty-second Session of the Executive Council, Paris, 1999	E, F, S, R
81.	Second Session of the IOC Black Sea Regional Committee, Istanbul, 1999	E only
82.	Twentieth Session of the Assembly, Paris, 1999	E, F, S, R
83.	Fourth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 1999	E, F, S, R
84.	Seventeenth Session of the International Coordination Group for the Tsunami Warning System in the Pacific, Seoul, 1999	E, F, S, R
85.	Fourth Session of the IOC Sub-Commission for the Western Pacific, Seoul, 1999	E only
86.	Thirty-third Session of the Executive Council, Paris, 2000	E, F, S, R
87.	Thirty-fourth Session of the Executive Council, Paris, 2001	E, F, S, R
88.	Extraordinary Session of the Executive Council, Paris, 2001	E, F, S, R
89.	Sixth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions, San José, 1999	E only
90.	Twenty-first Session of the Assembly, Paris, 2001	E, F, S, R
91.	Thirty-fifth Session of the Executive Council, Paris, 2002	E, F, S, R
92.	Sixteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Lisbon, 2000	E, F, S, R
93.	Eighteenth Session of the International Coordination Group for the Tsunami Warning System in the Pacific, Cartagena, 2001	E, F, S, R
94.	Fifth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 2001	E, F, S, R
95.	Seventh Session of the IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE), Mexico, 2002	E, S
96.	Fifth Session of the IOC Sub-Commission for the Western Pacific, Australia, 2002	E only
97.	Thirty-sixth Session of the Executive Council, Paris, 2003	E, F, S, R
98.	Twenty-second Session of the Assembly, Paris, 2003	E, F, S, R
99.	Fifth Session of the IOC Regional Committee for the Co-operative Investigation in the North and Central Western Indian Ocean, Kenya, 2002 (* Executive Summary available separately in E, F, S & R)	E*
100.	Sixth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, St. Petersburg (USA), 2002 (* Executive Summary available separately in E, F, S & R)	E*
101.	Seventeenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Paris, 2003 (* Executive Summary available separately in E, F, S & R)	E*
102.	Sixth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 2003 (* Executive Summary available separately in E, F, S & R)	E*
103.	Nineteenth Session of the International Coordination Group for the Tsunami Warning System in the Pacific, Wellington, New Zealand, 2003 (* Executive Summary available separately in E, F, S & R)	E*
104.	Third Session of the IOC Regional Committee for the Central Indian Ocean, Tehran, Islamic Republic of Iran, 21-23 February 2000	E only
105.	Thirty-seventh Session of the Executive Council, Paris, 2004	E, F, S, R
106.	Seventh Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, 2005 (* Executive Summary available separately in E, F, S & R); and Extraordinary Session, Paris, 20 June 2005	E*
107.	First Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), Perth, Australia, 3-5 August 2005	E only
108.	Twentieth Session of the Intergovernmental Coordination Group for the Tsunami Warning System in the Pacific, Viña del Mar, Chile, 3-7 October 2005 (* Executive Summary available separately in E, F, S & R)	E*
109.	Twenty-Third Session of the Assembly, Paris, 21-30 June 2005	E, F, S, R
110.	First Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS), Rome, Italy, 21-22 November 2005	E only
111.	Eighth Session of the IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE), Recife, Brazil, 14-17 April 2004 (* Executive Summary available separately in E, F, S & R)	E*
112.	First Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions (ICG/CARIBE-EWS), Bridgetown, Barbados, 10-12 January 2006	E only
113.	Ninth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), Cartagena de Indias, Colombia, 19-22 April 2006 (* Executive Summary available separately in E, F, S & R)	E S*

114.	Second Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), Hyderabad, India, 14–16 December 2005	E only
115.	Second Session of the WMO-IOC Joint Technical Commission for Oceanography and Marine Meteorology, Halifax, Canada, 19–27 September 2005 (Abridged final report with resolutions and recommendations)	E, F, R, S
116.	Sixth Session of the IOC Regional Committee for the Western Indian Ocean (IOCWIO), Maputo, Mozambique, 2–4 November 2005 (* Executive Summary available separately in E, F, S & R)	E*
117.	Fourth Session of the IOC Regional Committee for the Central Indian Ocean, Colombo, Sri Lanka 8–10 December 2005 (* Executive Summary available separately in E, F, S & R)	E*
118.	Thirty-eighth Session of the Executive Council, Paris, 20 June 2005 (Electronic copy only)	E, F, R, S
119.	Thirty-ninth Session of the Executive Council, Paris, 21–28 June 2006	E, F, R, S
120.	Third Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), Bali, Indonesia, 31 July–2 August 2006 (*Executive Summary available separately in E,F,S & R)	E*
121.	Second Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS), Nice, France, 22–24 May 2006	E only
122.	Seventh Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, Paris, France, 16–18 March 2005 (* Executive Summary available separately in E, F, S & R)	E*
123.	Fourth Session of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS-IV), Mombasa, Kenya, 30 February-2 March 2007 (* Executive Summary available separately in E, F, S & R)	E*
124.	Nineteenth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Trieste, Italy, 12–16 March 2007 (* Executive Summary available separately in E, F, S & R)	E*
125.	Third Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Bonn, Germany, 7–9 February 2007 (* Executive Summary available separately in E, F, S & R)	E*
126.	Second Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Cumaná, Venezuela, 15–19 January 2007 (* Executive Summary available separately in E, F, S & R)	E*
127.	Twenty-first Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Melbourne, Australia, 3–5 May 2006 (* Executive Summary available separately in E, F, S & R)	E*
128.	Twenty-fourth Session of the Assembly, Paris, 19–28 June 2007	E, F, S, R
129.	Fourth Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Lisbon, Portugal, 21–23 November 2007 (* Executive Summary available separately in E, F, S & R)	E*
130.	Twenty-second Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Guayaquil, Ecuador, 17–21 September 2007 (* Executive Summary available in E, F, S & R included)	E*
131.	Forty-first Session of the Executive Council, Paris, 24 June–1 July 2008	E, F, R, S
132.	Third Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Panama City, Panama, 12–14 March 2008 (* Executive Summary available separately in E, F, S & R)	E*
133.	Eighth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, Paris, France, 17–20 April 2007 (* Executive Summary available separately in E, F, S & R)	E*
134.	Twenty-third Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Apia, Samoa, 16–18 February 2009 (*Executive Summary available separately in E, F, S & R)	E*
135.	Twentieth Session of the IOC Committee on International Oceanographic Data and Information Exchange, Beijing, China, 4–8 May 2009 (*Executive Summary available separately in E, F, S & R)	E*
136.	Tenth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), Puerto La Cruz, Bolivarian Republic of Venezuela, 22–25 October 2008 (*Executive Summary available separately in E, F, S & R)	E, S*
137.	Seventh Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-VII), Sabah, Malaysia, 26–29 May 2008 (*Executive Summary available separately in E, F, S & R)	E*
138.	Ninth Session of the IOC-WMO-UNEP Committee for the Global Ocean Observing System, Paris, France, 10–12 June 2009 (* Executive Summary available separately in E, F, S & R);	E*
139.	Fifth Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Athens, Greece, 3–5 November 2008 (* Executive Summary available separately in E, F, S & R)	E*
140.	Fourth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Fort-de-France, Martinique, France, 2–4 June 2009 (* Executive Summary available separately in E, F, S & R)	E*
141.	Twenty-fifth Session of the Assembly, Paris, 16–25 June 2009	E, F, R, S