INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

Twenty-eighth Session of the Assembly

PROVISIONAL SUMMARY REPORT

Part 3

(Agenda items 1 (continuation), 5.3, 7.2, 8 & 10)

Unedited version as adopted on 25 July 2015 in plenary session
1. OPENING (continuation)

[...] Completes the report on item 1 published in Part 1 of the Draft Summary Report

1. UNESCO Director-General, Irina Bokova, addressed the IOC Assembly during the opening session, and returned on June 22 to take questions from the Member States. The Director-General stressed the importance of the role of the ocean within the sustainable development agenda, congratulated the IOC on the successful UN World Oceans Day event, and recalled the Rio+20 thematic priority of the ocean for development, livelihood and science. The Director-General recounted the challenge to IOC of performing with reduced financial resources and staff during the current biennium, which were partially offset by additional resources made available to IOC from the UNESCO Emergency Fund, and assured the Assembly that the IOC is one of the high priorities for UNESCO. As evidence of this commitment the Director-General reminded the Assembly that the UNESCO Draft Budget for 2016–2017 contains a proposed allocation to the IOC at the level of 2% of the total UNESCO budget, which, while modest, is a confirmation of a steady increase in the IOC share of the Organization’s total budget over the last four biennia.

2. The Director-General indicated that she follows, with great interest, the work on the Future of the IOC, its efforts to further sharpen the IOC mission and raise its visibility, and the reflections on the IOC functional autonomy and the efficiency of its governance. She expects from this work a clear statement from the IOC of its mandate, vision and responsibility in support of the Sustainable Development Agenda.

3. The Director-General complemented the commission on successful work within limited resources and thanked the outgoing officers for their commitment and contributions to the commission.

4. The Member States thanked the Director-General for her support and interest in the IOC. The Assembly appreciated the Director-General’s expression of support with regard to the need to sharpen the IOC mission and raise IOC image within the UN organizations, to further prioritize its core mandate in the area of long-term sustained observations and related data and information management, to increase the emphasis on regional priorities, including through a more balanced geographical distribution within the IOC Secretariat. The Director-General reiterated the importance of the Future of IOC process and emphasized how the IOC intergovernmental role, the interface between science and politics, is so important to the governance questions related to all Sustainable Development Goals and of fundamental importance to UNESCO.

5. OCEAN RESEARCH

5.3 SECOND INTERNATIONAL INDIAN OCEAN EXPEDITION

5. The chair of the Interim Planning Committee (Group of Experts) [IPC] for the Second International Indian Ocean Expedition (IIOE-2), Satheesh Shenoi, introduced this item. Recalling the resolution adopted by the IOC Executive Council
Dr Shenoi highlighted the IPC’s work in producing its report, including reference to governance and coordination, science and research, data and information management, capacity building, operational coordination, outreach and communication, transitioning science for society, and resources and sponsorship. Dr Shenoi advised that IPC offered to continue its tenure until the time of the recommended IIOE-2 launch (4 December 2015, GOA, India), to oversee the development of an IIOE-2 Steering Committee, and a complementary operational structure and implementation plan. Dr Shenoi urged other Member States and associated stakeholders to complement India’s and Australia’s early commitments of support, pointing to the IOC report for specific areas of need where further resources can be channelled for IIOE-2 by willing Member States and donors.

Prof. Peter Burkill, President of SCOR, presented in more detail on the developed science plan for IIOE-2, which was recommended by IPC for adoption as the IIOE-2 underpinning science framework, and which focussed on the six themes of: human impacts; boundary current dynamics, upwelling variability and ecosystem impacts; monsoon variability and ecosystem response; circulation, climate variability and change; extreme events and their impacts on ecosystems and human populations; and unique geological, physical, biogeochemical and ecological features of the Indian Ocean.

The Assembly commented on the IPC work and indicated strong support for the IIOE-2. Specific points were made: linking the IIOE-2 with the Indian Ocean Rim Association; promoting opportunities for berths on the first cruise for IIOE-2 (December 2015, Goa to Mauritius) aboard the Indian ORV Sagar Nidhi; dealing effectively with sovereignty issues in national EEZs in regard to data sharing, availability and activities in EEZs; promoting activity in the marginal seas of the Indian Ocean; engagement in IIOE-2 of the formal IOC Subsidiary Bodies, in particular regional ones; emerging commitments by various Member States to actively engage in IIOE-2, such as via cruises; and consideration of the merits of mounting similar ‘expeditions’ in other oceans.

Drs Shenoi and Burkill acknowledged and thanked Member States and Observers for their support.

The representatives of 17 Member States and four Observers took the floor. The following Member States and organization chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Australia, China, Indonesia, Japan, Thailand, UK, USA and GEBCO

The Assembly adopted Resolution XXVIII-1 submitted by Australia, India, Thailand, I.R. Iran, Mauritius, Tanzania, Egypt, United Kingdom, South Africa, Republic of Korea, Madagascar, Togo, China, Seychelles and Kenya.
7. OBSERVING SYSTEMS AND DATA MANAGEMENT

7.2 DATA MANAGEMENT

7.2.1 International Oceanography Data and Information Exchange: 23rd Session of IODE, 17–20 March 2015, Bruges, Belgium

12. The IODE Co-Chair of the IOC Committee on International Oceanography Data and Information Exchange (IODE), Cyndy Chandler (USA), introduced this item.

13. Ms Chandler informed the Assembly on the outcome of the 23rd Session of the IODE Committee (4 decisions and 5 recommendations) and the one-day (16 March 2015) scientific conference in celebration of the tenth anniversary of the establishment of the IOC Project Office for IODE in Ostend, Belgium (2005–2015).

14. The Committee focused its attention on the future of the IODE Programme, taking into account the continuing current financial crisis situation in which IOC and all its programmes find themselves, including IODE, but also the increased need for data and information management as a service to the ocean research, observation and management communities. The increased attention to data/information management by these communities has been demonstrated during the past intersessional period (2013–2015) by the establishment of 14 Associate Data Units (ADUs) that complement the network of 67 National Oceanographic Data Centres (NODCs). The cross-cutting nature of IODE is also evidenced by the contributions of IODE to the six functions defined in the IOC Medium-Term Strategy. The Committee had extensive discussions on how IODE should evolve and established an inter-sessional working group to propose the re-structuring of IODE. At the regional level the Committee decided that the Ocean Data and Information Networks (ODINs) should focus (where that is not the case yet) on linking with ongoing projects that have a data and information management component or require data and information management expertise. Regarding global activities, the Committee streamlined all activities into projects with specific terms of reference and management structures. In addition to the already existing 16 global projects, the Committee recommended the establishment of two new projects, while it closed one project.

15. The Committee had noted with appreciation the creation of a P-3 regular programme position for OBIS and GOOS. Both OBIS and ICAN (International Coastal Atlas Network) were now developing well within IODE and provided services to a variety of IOC (and other) programmes. The joint OBIS-GOOS Biology position would generate new opportunities for closer collaboration between IODE and GOOS.

16. The Assembly recognized the 10th anniversary of the IOC Project Office for IODE as an important milestone for the IOC and noted the continuous support of several Member States: the Government of Flanders (Belgium) for supporting the office, Russian Federation for its support through the Partnership Centre for the IODE Ocean Portal and Canada for providing staff support for the Portal.

17. The Assembly noted the high importance of oceanographic data and information management for research and policy-making.
18. The Assembly, while welcoming the increasing focus on the development of products and services, called on IODE not to forget its important role in long-term secure archival of oceanographic data and information.

19. Malaysia recalled that it has established an IODE ADU as well as OceanTeacher Regional Training Centre in 2014 and will proceed with organizing several training courses on quality management, GIS and fundamentals of data management in 2016.

20. South Africa, noting that an OceanTeacher Global Academy Regional Training Centre has been established in South Africa in 2014, informed the Assembly that a training centre on operational oceanography will be established in Cape Town, South Africa in the near future and offered cooperation of this new centre with the OceanTeacher Global Academy.

21. The Assembly noted the value of the new ADU as a mechanism to bring into IODE new data types and new stakeholder communities, and commended the decision taken by IODE-XXIII to review and revise the structure of IODE in order to make the programme more efficient as part of the “Future of IODE” actions. The Assembly also welcomed the integration of IODE across several other IOC programmes.

22. The representative of GEBCO, noting the data management component of GEBCO, called for collaboration with IODE.

23. The representative of POGO, referring to the history in collaboration with IODE, called for continued cooperation with IODE in the area of capacity development related to data and information management.

24. The representatives of 11 Member States and two organizations took the floor. The following Member States and organizations chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Canada, Chile, India, Japan, Malaysia, South Africa, Turkey and GEBCO, POGO.

25. The Assembly adopted Decision IOC-XXVIII, Dec. 7.2.1 below.

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**International Oceanographic Data and Information Exchange**

The Assembly,

Having examined the Executive Summary and Report of the 23rd Session of the IOC Committee on International Oceanographic Data and Information Exchange (IODE-XXIII) (17–20 March, Bruges, Belgium), the recommendations and the decisions contained therein (IOC/IODE-XXIII/3s),

Noting the financial and human resource implications of the work plan and the shortfall against the draft IOC Programme and Budget allocation for IODE,

Agrees to the IODE Work Plan for 2015–2017 (Recommendation IODE-XXIII.5) and to consider it in the overall IOC Programme and Budget resolution XXVIII-3;

Endorses the Report of the 23rd Session of the IOC Committee on International Oceanographic Data and Information Exchange and the recommendations contained therein;
Welcomes the increasing role of IODE across all IOC programmes through the six functions identified in the IOC Medium-Term Strategy;

Welcomes the balance, in the work plan, between global and regional activities and the strong focus on capacity development spearheaded by the OceanTeacher Global Academy;

Expresses its deep appreciation to the Government of Flanders (Belgium) for hosting and supporting the IOC Project Office for IODE and for its continuing and increasing financial support to IODE, the Russian Federation for its support through the hosting of the Partnership Centre for the IODE Ocean Data Portal in Obninsk, as well as to other donors and Member States who are providing financial and in-kind support for IODE;

Expresses its appreciation to the UNESCO Director-General for establishing a regular programme position for OBIS (shared with GOOS Biology) in March 2015;

Expresses its appreciation for the in-kind support for the IODE Programme provided by Member States through establishing and maintaining IODE Data Centres, provision of experts, through the provision of valuable ocean data and information products and services, and through financial and in-kind contributions to IOC;

Urges Member States to support the IODE Work Plan through cash contributions to the IOC Special Accounts for IODE and OBIS, secondments of staff members to the IODE Project Office, in-kind support such as hosting meetings or workshops with participant funding, the establishment of IODE partnership centres or OceanTeacher Regional Training Centres, or the funding of IODE or OBIS Projects or the establishment of National Oceanographic Data Centres.

8. EARLY WARNING AND SERVICES

8.1 REGIONAL TSUNAMI WARNING SYSTEMS

8.1.1 Intergovernmental Coordination Group for the Pacific Tsunami Warning Mitigation System: 26th Session of ICG/PTWS, 24–26 March 2015, Hawaii, USA

Mr Tomoaki Ozaki, Vice Chairman (Japan), on behalf of Ms Filomena Nelson (Samoa), Chair of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System (ICG/PTWS), introduced this item. Mr Ozaki reported on recent developments of the ICG/PTWS, including the New Enhanced PTWC products for PTWS which were introduced on 1st October 2014, as well as the start of the process for Enhanced Products by the North West Pacific Tsunami Advisory Center (NWPTAC). He further reported on the on-going establishment of a Tsunami Warning System in the South China Sea Region and the proposed establishment of a Regional Tsunami Advisory Centre for Central America, as discussed at the 26th session of the ICG/PTWS hosted by USA in Honolulu on 22–25 April 2015. He indicated that the ICG/PTWS decided to constitute, under the Steering Committee, a Task Team to look into performance monitoring measures for Tsunami Service Providers (TSPs), National Tsunami Warning Centres (NTWCs), and national warning systems. It also decided to establish a Task Team on Evacuation Planning and Mapping to develop a new programme aimed at facilitating tsunami resilience through community preparedness, specifically through the preparation of tsunami evacuation maps and
associated response plans for tsunami-vulnerable coastal communities. Mr Ozaki expressed that to enable the continued maintenance and enhancement of the ICG/PTWS, Member States will be requested to reaffirm their commitment to the system. He referred to the landmark International Tsunami Symposium “Making the Pacific Ready for the Tsunami Threat”, 20–21 April 2015, hosted by the Government of USA to celebrate the 50th anniversary of the ICG/PTWS.

27. Member States expressed support for the work of ICG/PTWS and offered to share their experience and expertise with other Member States. Japan confirmed its intention to develop North West Pacific Tsunami Advisory Center (NWPTAC) Enhanced Products by 2018. China indicated it will host an experts’ meeting on the South China Sea region hazard assessment in 2015. Panama indicated its support to the Central America Tsunami Advisory Center (CATAc) and Colombia noted that at the 26th session of the ICG/PTWS and the 10th session of ICG/CARIBE-EWS Member States indicated the need for a detailed hosting proposal of the CATAC by Nicaragua.

28. The representatives of nine Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Chile, China, Columbia, Japan, Republic of Korea, Thailand.

8.1.2 Intergovernmental Coordination Group for the Indian Ocean tsunami Warning and Mitigation System: 10th Session of ICG/IOTWS, 24-26 March 2015, Muscat, Oman

29. Dr Srinivasa Tummala (India), Chair of the Intergovernmental Coordination Group for the Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS), introduced this item. He recalled the history and governance structure of the ICG/IOTWS and highlighted its achievements in the decade since it was established. He reported on the progress and key activities of the ICG/IOTWS since it last reported to the Assembly. He highlighted the results of the IOWave14 exercise (9–10 September 2014) and the four IOTWS Communications Tests that had been conducted. He reported on the international conference to commemorate the 10th anniversary of the Indian Ocean Tsunami (Jakarta, Indonesia, 24–25 November 2014), the key recommendations and outcomes of which (IOC/BRO/2015/2) where conveyed to the 3rd UN World Conference on Disaster Risk Reduction (Sendai, Japan, 14–18 March 2015). He informed the Assembly that at its 10th session (Muscat, Oman, 24–25 March 2015), the ICG/IOTWS decided to merge two of its three working groups into a new working group focusing on “Tsunami Risk, Community Awareness and Preparedness”, and had established a new sub-regional Working Group for the Northwest Indian Ocean. The ICG/IOTWS also endorsed Terms of Reference for the Indian Ocean Tsunami Information Centre (IOTIC) and welcomed Indonesia’s offer to host IOTIC for a five-year period commencing 2016.

30. Looking to the future, Dr Tummala informed the Assembly that the ICG/IOTWS would place greater focus on community awareness and preparedness to help ensure more appropriate responses to tsunami warning information. He emphasized the important role of Tsunami National Contacts
(TNC), National Tsunami Warning Centres (NTWC) and Tsunami Warning Focal Points (TWFP) and encouraged the IOTWS Member States to respond to requests from the secretariat to nominate these key points of contact. Finally, he informed the Assembly that the ICG/IOTWS would continue to organise training activities to develop capacity in coastal hazards and risk assessment, and Standard Operating Procedures for tsunami warning and emergency response, subject to the availability of funding.

31. Member States expressed their continued support for the work of the ICG/IOTWS, and noted the achievements of the IOTWS in the decade since its establishment. The Assembly noted the recommendations of the international conference to commemorate the 10th Anniversary of the Indian Ocean Tsunami held in Jakarta, Indonesia in November 2014. It also noted that sustainability of the IOTWS and all other systems was a major concern. Australia confirmed that it will continue to provide funding support to the ICG/IOTWS Secretariat. India noted that the Indian National Centre for Ocean Information Services (INCOIS) is now a multi-hazard warning centre as it also forecasts storm surges.

32. The representatives of six Member States took the floor. The following Member States and organization chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Australia, India, Indonesia, Malaysia, and ESCAP.

8.1.3 Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and adjacent Regions: 10th Session of the ICG/CARIBE-EWS, 19–21 May 2015, Saint Maarten, Kingdom of the Netherlands

33. Ms Christa Von Hillebrandt Andrade (USA), Chair of the Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS), introduced this item. She highlighted the results of the CARIBE WAVE15 exercise and the continued enhancement of the detection network in the region. She indicated that since 2011, almost 500,000 people have participated in the CARIBE WAVE Exercises, with the next one already scheduled on Thursday 17 March 2016. With respect to monitoring networks she reported that there are currently 74 sea-level stations (including DARTS), which represent close to 70% of the Implementation Plan. She reported that the ICG/CARIBE-EWS approved the launch of PTWC Enhanced Products for the ICG/CARIBE-EWS in parallel with current products on 1st October 2015 and full transition to the Enhanced Products on 1st March 2016.

34. Ms Von Hillebrandt Andrade also reported on preparedness and awareness activities in the region including the status of the Caribbean Tsunami Information Center (CTIC). She reported that the Caribbean Tsunami Information Center’s core financial resources for its operational expenses are covered until the end of the year thanks to the recent approval of Emergency Funds for CTIC by the Director-General, and highlighted a matter of concern for Caribbean Member States that operational expense finances beyond 2015 are not secured.
35. Member States expressed their support to the ICG/CARIBE-EWS. United Kingdom indicated it will be providing additional sea-level stations for Anguilla (UK) and Turks and Caicos (UK) in partnership with NOAA. Panama will soon provide five new stations to the system. They requested the IOC Executive Secretary to make every effort to address the imminent gap in funding that may result in the halt of all operations of the Caribbean Tsunami Information Centre (CTIC) by identifying resources from the regular budget, extrabudgetary and/or other sources that may become available for the next biennium 2016-2017. Member States urged the IOC secretariat to explore innovative approaches to bring resources and continued funding to CTIC, such as the UK’s approach to the private sector including the cruise ship industry. Additional extra budgetary funds are sought to support CTIC, including through a specific proposal to be included in the updated Complementary Additional Programme (CAP) for 2016-2017.

36. The representatives of 10 Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Brazil, Dominican Republic, France.

8.1.4 Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-eastern Atlantic, the Mediterranean, 12-14 November 2014, Nicosia, Cyprus

37. Dr Ahmet Yalciner (Turkey), Chair of Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North-Eastern Atlantic, the Mediterranean and Connected Seas (ICG/NEAMTWS), introduced this item. He reported on the developments of the ICG/NEAMTWS, notably the continuation of the interim operational phase of NEAMTWS involving the Candidate Tsunami Service Providers (CTSPs) of France, Greece, and Turkey, and including the commencement of the activity of Italy as CTSP as of 1st October 2014. He also reported the steady progress made towards the provision of tsunami services for the region by Portugal. Ensuring interoperability among these centres is one of the priority areas for the upcoming years, and for this reason a new Task Team on Operations has been established at the ICG/NEAMTWS-XI. He also reported the progress made by Germany, Israel, and Spain towards the creation of their National Tsunami Warning Centres (NTWCs). Dr Yalciner informed the Assembly of preparatory activities, including a regional workshop for Maghreb countries, a workshop for Civil Protection Authority organized in Brussels jointly with the European Commission Directorate General for Humanitarian Aid and Civil Protection (DG ECHO), which co-funded the exercise. Dr Yalciner informed the Assembly of a side event during this session to present the NEAMWave14 results. In a more prospective view Dr Yalciner highlighted the challenges and the priorities for NEAMTWS. The public and the authorities remain relatively unaware of the regional tsunami risk, therefore it is recommended to increase education and awareness raising activities in the region. The participation of civil protection authorities has significantly increased as demonstrated by their participation in NEAMWave14, but more targeted activities, including training for emergency managers, will have to be organized. The success of the NEAMTWS depends on the participation of all countries bordering the Mediterranean Sea and North-eastern Atlantic Ocean, including countries that have not yet nominated tsunami national contacts and tsunami warning focal points. Dr Yalciner emphasized that
the detection networks need to be sustained by national and international funding and that targeted activities should be organized for those countries where there remain gaps in the seismic and sea level networks.

38. Member States commended the work of NEAMTWS to implement the system and stressed that this is a very crucial moment for the system which requires elevation from pre-operational status to its full implementation. Member States intervened to remind the Assembly of significant national achievements which are cumulatively contributing to the implementation of NEAMTWS in the region. The Assembly, considering the increase of the activities of NEAMTWS and of its Tsunami information Centre (NEAMTIC), suggested that the IOC Secretariat consider means to strengthen support and consider the establishment of a full time technical secretary position.

39. The representatives of five Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Turkey, UK

8.2 GLOBAL COORDINATION OF WARNING AND MITIGATION SYSTEMS FOR OCEAN HAZARDS (TOWS-WG)

40. Mr Yutaka Michida (Japan), Chair of the Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG) introduced this item. He reported on the decisions and recommendations of the 8th meeting of TOWS-WG.

41. Mr Michida emphasised the importance of the Sendai Framework for Disaster Risk Reduction 2015–2030 and noted that the tsunami programme activities should be planned within this framework. He noted that 2014 and 2015 were commemorative years for all the ICGs and highlighted in particular the international conferences for the IOTWS and PTWS held in Jakarta, Indonesia and Honolulu, USA respectively. He outlined the structure of the tsunami programme at IOC and referenced the IOC resolutions and decisions that had established and maintained the TOWS-WG and its Task Teams.

42. Referring to the 8th Meeting of the TOWS-WG held in Morioka, Japan, 12–13 March 2015, he noted the decisions and recommendations arising from the meeting. In particular he referred to the recommendations of the TOWS-WG Task Teams on: Tsunami Watch Operations; Hazard Assessment Related to Highest Potential Tsunami Source Areas; and Disaster Management and Preparedness. Mr Michida acknowledged the involvement of the CTBTO, IHO and GEBCO in the TOWS-WG and emphasised the importance of collaboration with both organisations for tsunami warning purposes.

43. Mr Michida highlighted some of the challenges that lie ahead, including the lack of core financial resources to sustain the CTIC beyond December 2015. He strongly urged the Member States to increase their extra-budgetary contributions to the IOC to provide needed resources for the priorities identified by the TOWS-WG. Finally, Mr Michida recommended that the TOWS-WG and its Task Teams should
be extended for another intersessional period with the same Terms of Reference and membership to allow it to complete their workplans.

44. Member States noted that global coordination of tsunami warning systems is essential and appreciated that the TOWS-WG has proven to be a successful and essential mechanism for ensuring coordination and information exchange, leading to mutually beneficial developments and harmonization of tsunami warning systems globally. The Assembly commended the work done by the ICGs and the organization of tsunami exercises which have brought visibility to the IOC. IHO/GEBCO commented that it will continue to provide support to the ICGs and requested that it be informed of ICG meetings so that it can participate.

45. The representatives of four Member States and GEBCO took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: France, USA, and GEBCO.

46. The Assembly adopted Decision IOC-XXVIII,Dec.8.2 below.

**Tsunami and Other Coastal Hazards Warning Systems**

The Assembly,

- **Notes** the outcomes from the Third United Nations World Conference on Disaster Risk Reduction Risk (UN WCDRR), Sendai, Japan, 14–18 March 2015, and the resulting government commitments to the Sendai Framework for Disaster Risk Reduction 2015–2030 (A/CONF.224/L.2);
- **Decides** that in the future all Intergovernmental Coordination Groups for Tsunami Early Warning and Mitigation include in their reports to the IOC Governing Bodies a section with their performance against targets of the Sendai Framework for Disaster Risk Reduction 2015–2030;
- **Recognizes** the importance of the TOWS working group in continued harmonisation of products and services of all tsunami early warning and mitigation systems, with the necessary adjustments for smaller seas;

I. **Pacific Tsunami Warning and Mitigation System (PTWS)**

- **Noting with appreciation** the tsunami forecasting products provided for the Member States of the PTWS by the PTWC hosted by the USA and the NWPTAC hosted by Japan, and the guidance materials by the ITIC,
- **Noting** the outcomes of the International Tsunami Symposium Commemorating the 50th Anniversary of the Pacific Tsunami Warning and Mitigation System “Making the Pacific Ready for the Tsunami Threat” (20–21, April 2015, Honolulu, Hawaii, USA),
- **Endorses** the continuity of the PTWC Enhanced Products for PTWS;
- **Agrees** that the Northwest Pacific Tsunami Advisory Center (NWPTAC) should proceed with its development of enhanced products for the North West Pacific;
- **Takes note of** Nicaragua’s offer to host and develop a Tsunami Advisory Center for Central America (CATAC) under the guidance of the Regional Working Group on
Tsunami Warning and Mitigation System on the Central American Pacific Coast, within the framework of ICG/PTWS, ICG/CARIBE-EWS and TOWS-WG;

Requests Member States to promptly inform the Secretariat of all changes to their Tsunami National Contacts (TNCs), National Tsunami Warning Centres (NTWCs), and Tsunami Warning Focal Points (TWFPs) through official channels;

II. Indian Ocean Tsunami Warning and Mitigation System (IOTWS)

Notes the outcomes and recommendations of the international conference “The Indian Ocean Tsunami Warning and Mitigation System 10 years after the Indian Ocean Tsunami: Achievements, Challenges, Remaining Gaps and Policy Perspectives” (22–23 November, Jakarta, Indonesia); and notes also the International Conference “Reducing Tsunami Risk in the Western Indian Ocean: a Regional Conference in Muscat”, 22–23 March 2015, Muscat, Oman;

Notes with concern that the EUMETSAT Meteosat-7 will be decommissioned in 2016, and urges WMO to address the issue of its replacement to ensure availability of real-time sea level data in the Indian Ocean region for tsunami warnings;

Encourages Member States to update their Tsunami National Contact (TNC), National Tsunami Warning Centre (NTWC) and Tsunami Warning Focal Point (TWFP) information and inform the Secretariat of all changes through official channels;

Notes the diminishing engagement by some Member States in the activities of the ICG/IOTWS, and urges Member States to participate more actively;

Welcomes with gratitude, the generous offer of Indonesia to support IOTIC for a period of five years commencing 2016;

Decides to change the IOTWS acronym to IOTWMS to fully reflect the actual name of the System and the importance of Mitigation in the work of the ICG.]

III. Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE-EWS)

Endorses the start of issuance of the PTWC Enhanced Products for CARIBE-EWS in parallel with current products on October 1, 2015 and its full transition to the new products on March 1, 2016;

Notes the approval of the guidelines for the Community Performance Based Tsunami Recognition Programme for the Caribbean and Adjacent Regions as outlined in Appendix I of Recommendation ICG/CARIBE-EWS-X.6, for implementation on a pilot basis, and invites Member States and donor agencies to support pilot projects;

Takes note of Nicaragua’s offer to host and develop a Tsunami Advisory Center for Central America (CATAC) as a sub-regional Tsunami Service Provider under the guidance of the Regional Working Group on Tsunami Warning and Mitigation System on the Central American Pacific Coast, within the framework of ICG/PTWS, ICG/CARIBE-EWS and TOWS-WG;

Recognizes the Caribbean Tsunami Information Center (CTIC) essential function in the region and agrees that CTIC is a matter of priority for the IOC, and calls on
Member States and other donors to provide extra-budgetary funds to sustain its functioning.

IV.  North-Eastern Atlantic, the Mediterranean and Connected Seas Tsunami Warning and Mitigation System (NEAMTWS)

Welcomes that the Candidate Tsunami Service Providers of France, Greece, Italy and Turkey provide tsunami warning service to the ICG/NEAMTWS Member States upon request via the IOC;

Notes the steady progress of Germany, Israel, Spain, and Portugal in developing their National Tsunami Warning Centres and the intent of Portugal to also act as Candidate Tsunami Service Provider and thereby contributing to tsunami monitoring coverage for all geographic areas of NEAMTWS;

Urges Member States to support NEAMTWS through extra-budgetary contributions, secondments of staff members, and in-kind support for the organization of workshops and capacity development activities;

V.  Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG)

Having considered the executive summary reports of the recent sessions of the Intergovernmental Coordination Groups for: the Pacific Ocean Tsunami Warning and Mitigation System (ICG/PTWS-XXVI), The Indian Ocean Tsunami Warning and Mitigation System (ICG/IOTWS-X), the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-X), the North-Eastern Atlantic, the Mediterranean and Connected Seas Tsunami Warning and Mitigation System (ICG/NEAMTWS-XI), and the report of the Working Group on Tsunamis and Other Hazards Related to Sea-Level Warning and Mitigation Systems (TOWS-WG-VIII),

Accepts the reports and the decisions and recommendations contained therein;

Notes the ongoing work of TOWS-WG as well as the work of its Task Teams and decides that their ToRs and membership be extended for the next biennial period;

Noting the growing dependence and use of seismic data from the International Monitoring System of the Preparatory Commission for the Comprehensive nuclear-test-ban treaty organization (CTBTO) data by National Tsunami Warning Centres, as set out under the CTBTO-UNESCO MoU of 2010;

Encourages more National Tsunami Warning Centres to sign formal agreements with CTBTO to receive seismic and hydro acoustic data from the CTBTO International Monitoring System;

Notes further the reports on the ITU/UNESCO-IOC/WMO Joint Task Force (JTF) to investigate the potential of using submarine telecommunications cables for ocean and climate monitoring and disaster warning; and encourages the development of pressure sensors for underwater telecommunication systems to augment existing tsunami monitoring networks;

Recognizes that the current financial situation strongly limits the implementation of the tasks of the Group, ICGs and Inter-ICG Task Teams; and strongly urges the Member States to increase their extra-budgetary contributions to the IOC to provide
the needed resources for the priorities identified by TOWS-WG and the Intergovernmental Coordination Groups (ICG);

Notes with concern that the Caribbean Tsunami Information Centre’s core financial resources to cover its operational expenses (including salaries) beyond December 2015 are currently non-existent;

Agrees that the regular budget for ICG activities will be identified as part of the overall IOC Programme and Budget resolution XXVIII-3.

8.3 HARMFUL ALGAL BLOOMS: 12TH SESSION OF THE INTERGOVERNMENTAL PANEL ON HARMFUL ALGAL BLOOMS (IPHAB), 28-30 April 2015

47. The Chair of the IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB), Mr Gires Usup (Malaysia), introduced this item and presented the report, work plan, eight decisions and two recommendations of the 12th Session of the IOC Intergovernmental Panel on Harmful Algal Blooms Paris, 28–30 April 2015.

48. The Chair IPHAB emphasized the decisions and recommendations made regarding: an international strategy for ciguatera fish poisoning, for the joint IOC-SCOR research initiative on HABs in a changing world to meet societal needs; the development of the Global HAB Status Report; long-term capacity building; and the regional development of the Programme. He also stressed the unique role IOC can play in resolving scientific issues and management solutions to the problems encountered by the desalination industry due to HABs, provided that the adequate extra-budgetary funds are identified for the Complementary Additional Programme.

49. The Chair advocated for participation of Member States in IPHAB sessions and recognition of the HAB programme in the appropriate national agencies and institutions.

50. The Chair IPHAB urged the IOC Member States to carefully match the HAB Programme work plan with national priorities and potential funding in order to actively interact with and support its implementation.

51. The Assembly expressed appreciation of the progress made and the priorities set for the biennium 2016–2017. Member States referred to the continuous, and in several cases, increasing major public health threats from neurotoxins, impact on aquaculture, massive fish kills, damage to coastal ecosystems, and impacts of Ciguatera Fish Poisoning (CFP). The Assembly acknowledged that HAB occurrences may be determined by both natural and anthropogenic factors and that the IOC should continue to pursue the science for improved management and mitigation through GlobalHAB. Particular importance was given to the interagency strategy on CFP under development and implementation. The Assembly recognized that the Global HAB Status Report will be important for informing public opinion and the broader international community.
The Assembly stressed the need for effective and continuous coordination between regional and global IOC activities on HAB to ensure benefits of complementarity and synergy.

Several Member States expressed their willingness to directly support work plan implementation; Spain expressed its willingness to support the continued publication of the IOC newsletter *Harmful Algae News*; the USA expressed its willingness to provide scientific expertise and financial resources to address CFP; Malaysia offered to host a workshop on biotoxins for South East Asia; and Colombia expressed commitment to contribute to capacity development activities on HAB. India expressed its wish to associate with IPHAB.

The representatives of 12 Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Australia, Canada, Colombia, France, India, Japan, Malaysia, Thailand.

The Assembly adopted Decision IOC-XXVIII, Dec. 8.3 below.

**Harmful Algal Blooms**

The Assembly,

Recalling IOC Resolution XVI-4, which established the Intergovernmental Panel on Harmful Algal Blooms,

Having considered the Executive Summary Report of the 12th Session of the IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB), its eight Decisions and two Recommendations and the work plan for 2016–2017 adopted at the Session (IOC/IPHAB-XII/3),

Expresses its appreciation for the support for the HAB Programme provided by Member States through regional HAB groups, the IOC Science and Communication Centre on Harmful Algae, provision of experts, and through the provision of HAB data, and financial and in-kind contributions to IOC;

Noting with satisfaction that IPHAB has continued to provide an efficient mechanism to respond to new HAB-related problems experienced by Member States, to leverage resources from diverse sources to focus on priority needs, and to establish partnerships with relevant organizations,

Endorses the Executive Summary Report of IPHAB-XII and the recommendations contained therein (IOC/IPHAB-XII/3s);

Agrees to the HAB Work Plan for 2016–2017 (Recommendation IPHAB-XII.2) and to consider it in the overall IOC Programme and Budget resolution XXVIII-3;

Urges funding agencies and institutions in IOC Member States to assist in the mobilization of funding that will ensure the implementation of the IPHAB Work Plan for 2016–2017 (~US$ 460,000 for full implementation).
10. SUSTAINABLE DEVELOPMENT AND GOVERNANCE

10.1 UN COORDINATION AND CONTRIBUTION TO OCEAN GOVERNANCE

56. The Head of the Marine Policy and Regional Coordination Section (MPR), Julian Barbière, presented the IOC contribution to various ocean–related UN inter-agency activities. As the focal point within the UN system for ocean sciences, observations, services, data and information exchange and capacity development, IOC contributes to a number of UN processes, responds to the needs expressed by the UN General Assembly, and plays an active role in UN inter-agency mechanisms and activities.

57. Mr Barbière highlighted a number of UN initiatives that are highly relevant to the mandate of the IOC, namely: (i) the on-going UN negotiations related to formulation of a set of the Sustainable Development Goals in the context of the Post-2015 Development Agenda, and particularly the proposed goal No. 14 on ocean, that calls for, inter alia, increasing scientific knowledge, developing research capacities and transferring marine technology taking into account the IOC Criteria and Guidelines on the Transfer of Marine Technology (SDG Target 14.a); (ii) UN-Oceans, the UN inter-agency coordination mechanism on ocean affairs; (iii) the outcome of the UN Conference on Small Island Developing States (1–4 September 2014) in Samoa; (iv) negotiations related to the development of a legally binding instrument under UNCLOS on the conservation and sustainable use of marine biological diversity in areas beyond national Jurisdiction (BBNJ); and (v) the forthcoming UNFCCC Conference of Parties (COP-21) to be held in December 2015 in Paris.

58. The Assembly welcomed the engagement of IOC in the Post-2015 Development Agenda and SDG process, including its role in providing technical support for the development of the SDG indicator framework, as well as their future implementation. The Assembly highlighted the importance of supporting the needs of SIDS in response to the priorities contained in the SAMOA Pathways outcome document, particularly in the areas of climate change adaptation, tsunami, and the sustainable use of marine biodiversity.

59. In the context of emerging frameworks such as the Post-2015 Development agenda and BBNJ process, and without pre-empting the outcome of such negotiations, the Assembly encouraged the Secretariat, with the support of the IOC Member States, to raise the visibility of the Commission in the fields of ocean indicator development, capacity development in ocean science and transfer of marine technology.

60. The representatives of five Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: France, Indonesia, Japan, New Zealand, Poland, UK.

61. The Assembly adopted Decision IOC-XXVIII,Dec.10.1 below.
UN Coordination and Contribution to Ocean Governance

The Assembly,

Having considered document IOC/INF-1328,

Takes note and welcomes the active role played by the Commission in UN-Oceans, the Post-2015 Development Agenda and elaboration of proposed Sustainable Development Goals (SDG), targets and indicators, the outcome to the UN Conference on Small Island Developing States (SIDS), and the UN negotiations related to the conservation and sustainable use of marine biological diversity beyond areas of national Jurisdiction;

Invites IOC Member States to support IOC’s role and contributions in these processes by integrating, as far as possible, the importance of the oceans and the contribution of IOC into their preparation and statements at intergovernmental negotiations on the Post-2015 Development Agenda, as well as at negotiations related to the development of an international legally binding instrument under the United Nations Convention on the Law of the Sea related to the conservation and sustainable use of marine biological diversity beyond areas of national Jurisdiction.

10.2 INTEGRATED COASTAL AREA MANAGEMENT PROGRAMME (ICAM)

62. In accordance with IOC-XXVI/Dec.8.2, Julian Barbière, Head, Marine Policy and Regional Coordination section (MPR), introduced this item and provided a progress report on the implementation of the ICAM Strategy, covering activities that are being developed in the field of Integrated Coastal Area Management (ICAM), Marine Spatial Planning (MSP), coastal hazards mitigation, and decision-support tools for coastal and ocean management.

63. In this context, Mr Barbière presented new project initiatives: first the GEF:Learn-LME Project entitled “Strengthening global governance of Large Marine Ecosystems and their coasts through enhanced sharing and application of LME/ICM/MPA knowledge and information tools” to be implemented through IOC; secondly, the European Horizon 2020 Project AQUACROSS in which IOC/MPR is leading the work packages of transboundary waters indicators and the development of the information platform, as well as the pilot case study at the Intercontinental Biosphere Reserve of the Mediterranean: Andalusia (Spain) – Morocco; and thirdly the new activities sponsored by the Moore Foundation to support a global assessment on dissemination of MSP practices around the world.

64. Mr Barbière highlighted the implementation progress of the Data and Information Network in support to Integrated Coastal Area Management in the Southeast Pacific region (SPINCAM Project) with the support of IODE and ICAN, and the final results of the European FP7 Project PEGASO for the Mediterranean and the Black Sea. In terms of capacity development, Mr Barbière presented the framework design by MPR for trainings on ecosystem-based management (ICAM/MSP) and decision support tools in response to different demands from the coastal community, the lessons learnt from the 15 trainings organized during the last two years and the newest set of IOC guidelines on Marine Spatial Planning in different languages.
65. The Assembly welcomed the contribution of SPINCAM to the Southeast Pacific Region and the capacity development activities dedicated to marine spatial planning commonly organized by the IOC/MPR and OceanTeacher in English (South Africa) and Spanish (Colombia) by highlighting the need to continue the training efforts in other languages such as French and Portuguese, and in other regions.

66. The representatives of three Member States, two organisations took the floor. The following Member State and organization chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: India and GEBCO

67. The Assembly adopted Decision IOC-XXVIII,Dec.10.2 below.

**Implementation of IOC Integrated Coastal Area Management Strategy**

The Assembly,

Recalling IOC-XXVI/Dec.8.2,

Takes note of the progress in implementing the IOC ICAM Strategy, including activities related to marine spatial planning and large marine ecosystems (IOC/INF-1329);

Expresses its deep appreciation to the Government of Flanders (Belgium) for the secondment of an expert to the ICAM Programme (SPINCAM Project);

Invites Member States to support through extra-budgetary resources, as well as in-kind contributions, the ICAM Strategy and relevant project activities such as the organisation of an international conference on Marine Spatial Planning in 2016 at IOC Headquarters.

10.3 INTERNATIONAL POLAR PARTNERSHIP INITIATIVE

68. The Executive Secretary, Dr Vladimir Ryabinin, introduced this item. He reviewed the scientific and societal value of the expected outputs of the International Polar Partnership Initiative (IPPI), and the scope and objectives defined in the IPPI concept. He expressed that the IPPI seeks to strengthen cooperation and improve coordination and sharing of resources for polar activities through a common implementation plan for the development of observing systems, research, services, education and outreach, and practical application of knowledge. An Interagency Steering Group has initially developed and, later, refined a concept for the IPPI, which indicates the strong influence of the polar regions on the Earth system, the harsh polar environment and resultant high cost of operations, and the fact that no nation or organization is able to effectively achieve the objectives of their polar activities without strong cooperation with partners.

69. Dr Ryabinin reviewed the updated scope, objectives and expected outputs of the IPPI. He recalled the decision of the IOC Executive Council (EC-XLVII/Dec.6.4, 2014), which provided an advice to the IPPI Steering Group to
clearly identify added value, societal outputs, and scope, objectives, and expected results of IPPI and to identify synergies with other polar initiatives. Dr. Ryabinin presented examples of the added value of the IPPI to existing IOC research, observation, data collection and management, and services programmes. As well, he recalled the recent decision of the 17th World Meteorological Congress (25 May–12 June 2015, Geneva, Switzerland), which encouraged the WMO Secretary-General to further develop a clear Framework of the Partnership, to be reviewed by WMO Executive Council in 2016, with a view to defining WMO’s roles in and contributions to the future IPPI Framework, and the support to the idea of IPPI expressed by a number of other international organizations.

70. The Assembly stressed the importance of research and observations of the polar regions for all IOC Member States, and stressed that the IPPI Framework needed further development, with traceable consultation with the consultative Parties to the Antarctic Treaty and the Members of the Arctic Council.

71. The representatives of 12 Member States took the floor. The following Member States chose to provide records of their plenary intervention on this agenda item for the informational annex to the meeting report: Argentina, Australia, Canada, Colombia, Denmark, France, India, Japan, Republic of Korea, Malaysia.

72. The Assembly adopted Decision IOC-XXVIII,Dec.10.3 below.

International Polar Partnership Initiative

The Assembly,

Noting the revised Concept Paper for the International Polar Partnership Initiative (IPPI, IOC-XXVIII/2 Annex 9),

Having also noted the decision of the World Meteorological Congress-17 (25 May–12 June 2015, Geneva, Switzerland) on WMO participation in IPPI,

Encourages the Steering Group to develop a clear framework of the Partnership, acting in close coordination and consultation and respecting the interests and obligations of the consultative Parties to the Antarctic Treaty and similar interests of the members of the Arctic Council; and reiterates its request to the Executive Secretary to work towards the IPPI Framework being developed in close coordination and consultation with consultative parties to the Antarctic Treaty and members of the Arctic Council;

Requests the Executive Secretary to:
- secure IOC representation in the development of the IPPI Framework;
- submit the Framework for consideration of the IOC Executive Council at its 49th session in 2016 in order to analyse the possible participation, roles in and contributions of IOC to future IPPI activities, and report to it on the interactions and meetings attended in this regard.