

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



**IOC Sub-Commission  
for the Caribbean and  
Adjacent Regions (IOCARIBE)**

**Eleventh Session**

Miami, USA

17–20 May 2011

**UNESCO**

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# **IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE)**

## **Eleventh Session**

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**UNESCO 2011**

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## 1. OPENING

1 The Vice-Chairperson of IOCARIBE, Mr Clement Lewsey (United States), opened the Eleventh Session of the IOC (UNESCO) Sub-Commission for the Caribbean and Adjacent regions SC-IOCARIBE-XI Session at 09.00 on Tuesday 17 May 2011, at the Rosenstiel School of Marine & Atmospheric Sciences RSMAS, Miami, USA.

2 In his remarks, Mr Lewsey thanked the University of Miami and CIMAS for providing the venue and facilities to host the Sub-Commission Meeting and IOC and IOCARIBE for preparing necessary local arrangements and documentation.

3 Also, Mr Lewsey presented apologies from Mr Guillermo Garcia (Cuba), IOCARIBE Chairman, who was not able to attend the Session. Following the Rules of Procedure, Mr Lewsey chaired IOCARIBE-XI.

4 Dr Peter Ortner, Director of the Cooperative Institute for Marine and Atmospheric Studies (CIMAS) at RSMAS, welcomed delegates from Member States, countries and regional organizations attending the session. Dr Ortner encouraged attendance in the Thursday afternoon panel discussion on addressing the need for capacity building in the marine sciences and the challenge of sustainable development within the context of predicted climate change.

5 The IOC Deputy Executive Secretary, Mr Mitrasen Bhikajee, addressed the Session on behalf of Dr Wendy Watson-Wright, Executive Secretary of the Intergovernmental Oceanographic Commission (IOC) of UNESCO. On his opening speech Mr Bhikajee thanked the US Government for hosting the Session and highlighted the role of the ocean and the importance of IOC and its coordinating role throughout the world. He highlighted the importance of the work of the IOCARIBE Sub-Commission and mentioned the CLME Project as one example of a successful achievement of regional coordination.

6 The IOCARIBE Vice-Chair, Mr Clement Lewsey, then presented a Certificate of Appreciation from the IOC to the US National Oceanic and Atmospheric Administration NOAA, "in recognition of the support provided to the Intergovernmental Oceanographic Commission of UNESCO's Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) for meeting its goals in research and development of ocean sciences and services for close to three decades". Dr Bill Proenza accepted this Certificate and thanked IOC on behalf of NOAA for such recognition.

7 The full text of introductory remarks is included at [Annex III](#).

## 2. ADMINISTRATIVE ARRANGEMENTS

### 2.1 ADOPTION OF THE AGENDA

8 The IOCARIBE Vice-Chairperson introduced this item. The Provisional Agenda was presented to the Session for adoption.

9 Member States were reminded that the deadline for informing the IOC (UNESCO) Secretary for IOCARIBE of their nominations for the elections of Members of the IOCARIBE Board of Officers was Tuesday 17 May 2011 at 18.30 hrs. Similarly, the deadline for the submission of Draft Recommendations was Thursday 19 May, 2011 at 12.30. The Sub-commission decided to extend deadline for receiving nominations until Thursday 18 May at 18:00.

10 **The Sub-Commission adopted** the Agenda with no changes. The Agenda as adopted is included in [Annex I](#).

## 2.2 DESIGNATION OF THE RAPPORTEURS FOR THE SESSION

11 The Vice-Chairperson invited the Session to designate a Rapporteur for each language (Spanish and English) for the present session to assist the Chairman and the UNESCO/IOC Secretary for IOCARIBE in the preparation of the Draft Summary Report.

12 United States proposed Ms Elizabeth Tirpak, to act as the English-language Rapporteur and Colombia proposed Mr Esteban Uribe to act as the Spanish language Rapporteur.

13 **The Sub-Commission accepted** the proposals and **welcomed** Ms Tirpak and Mr Uribe as the Rapporteurs for the present session.

## 2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

14 The UNESCO/IOC Secretary for IOCARIBE, Dr Cesar Toro, introduced the documentation and invited the Session to adopt the Provisional Timetable taking into account: (i) any Session decision to include supplementary items; (ii) the time likely to be required by the session working groups to report in plenary; (iii) the preparation of the Draft Summary Report and Recommendations in English and Spanish; and (iv) the need to benefit from interpretation.

15 He explained that the Action Paper (IOC/SC-IOCARIBE-XI/2) serves as the basic working document for the Session.

16 The Session was requested to work in plenary session as far as possible, and, when deemed necessary, constitute open-ended working groups to deal with specific questions arising from particular agenda items. These Drafting Groups shall meet simultaneously or after Plenary. Their product shall serve as the basis for and facilitate the debate in Plenary.

17 The Sub-Commission decided to constitute the following statutory and open-ended sessional committees. The Chairman invited Member States to indicate their wish to participate in the:

- (i) Nominations Committee (Agenda Item 8.3): under the Chairship of Ms Jennifer Schull (United States), with the following composition: USA and Jamaica.
- (ii) Recommendations Committee (Agenda Item 9): under the chairship of Dr Lorna Inniss (Barbados), with the following composition: Barbados, United States and Curacao.

18 The Sub-Commission later constituted:

- (iii) An open-ended sessional drafting group on the Global Reporting and Assessment on the State of the Marine Environment (Item 5.1.4), with the following composition: Brazil, Dominican Republic, Trinidad & Tobago and United States.

19 Recommendations approved are included in [Annex II](#), the List of Participants in [Annex IV](#) and the List of Acronyms in [Annex V](#).

## 3. REPORT OF THE IOCARIBE SECRETARY ON INTERSESSIONAL ACTIVITIES

### 3.1 STATEMENT OF THE CHAIRMAN

20 The IOCARIBE Vice-Chairperson Dr Clement Lewsey, introduced this item on behalf of the IOCARIBE Chairman, Dr Guillermo Garcia. He delivered his statement on recent developments in the work of the Sub-Commission since the Tenth Session of IOCARIBE (Puerto La Cruz, Venezuela, 22–25 October 2008) and perspectives for the coming years. He

referred to developments and the state of implementation of the four recommendations approved by the Sub-Commission and endorsed by the Twenty-fifth Session of the IOC Assembly by IOC Resolution XXV-5 (Paris, 16–25 June 2009).

- 21 Dr Lewsey reviewed developments in IOCARIBE programmes for 2009–2011: the Global Ocean Observing System in the region (IOCARIBE-GOOS); the Integrated Coastal Area Management (ICAM); the Caribbean Large Marine Ecosystem (CLME); the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (CARIBE-EWS); Harmful Algal Blooms in the Caribbean and Adjacent Regions (HAB-ANCA); the International Bathymetric Chart of the Caribbean Sea and the Gulf of Mexico (IBCCA); International Oceanographic Data and Information Exchange (IODE); the Caribbean Marine Atlas (CMA); and capacity-building.
- 22 Dr Lewsey acknowledged the quality and quantity of activities carried out during the intersessional period by the IOCARIBE Sub-commission. He expressed his concern about the support IOC is putting into the Sub-Commission and the constraints for implementing regional activities based on the present funding scheme.
- 23 Dr Lewsey indicated that communications among the Board during the intersessional period were infrequent, and that the IOCARIBE Sub-Commission would benefit from more attention to this matter.
- 24 The IOCARIBE Secretary emphasized that continued financial support from Member States will be necessary to achieve the mission of the IOCARIBE Sub-Commission.
- 25 Barbados highlighted that it is clear that IOC's programmes for the region are important to Member States. They are not only involved, but are also regularly engaged in the conduction of national capacity building initiatives. Barbados hopes that the Member States will ensure that the same level of commitment to the Sub-Commission and its programmes is reflected at the level of the IOC Assembly.
- 26 Considering that the Sub-Commission will elect a new Board of Officers, Barbados proposed that, as determined in the Medium-Term Strategy, when the programmes are presented, specific assignments for programmes be given to the members of the Board for follow-up. Thus, allocating specific programmes for the members of the Board necessitates good communication among the Board members and between the Board and the focal points for IOCARIBE programmes. Considering that funding remains a major challenge for the Sub-Commission, she urged Member States to inform their Permanent Delegations to UNESCO in Paris to ensure that appropriate levels of funding are allocated to IOC, and accordingly, for regional programmes.
- 27 **The Subcommission noted** this offer and **endorsed** the proposal of Barbados.
- 28 The IOC Deputy Secretary referred to the Meeting of the Executive Board of UNESCO in Paris and reported to the Session that IOC has requested to increase the IOC budget to UNESCO. IOCARIBE has been extremely successful despite the little funding provided. He thanked the Board of Officers and the Secretary for the good results on the work of the Sub-Commission.
- 29 Jamaica regretted that hosting the Eleventh Session in their country was not possible due to funding reasons and agreed with Barbados' proposal of having specific assignments and responsibilities for the members of the Board.



### 3.2 REPORT BY THE SECRETARY ON PROGRAMME AND BUDGET

30 The UNESCO/IOC Secretary for IOCARIBE introduced this item. He presented the current and future budgetary situation of the IOCARIBE Sub-Commission and referred to Doc. IOC/SC-IOCARIBE-XI/2 Annex 2, Progress report on Budget Execution.

31 He referred to recent budgetary restrictions suffered by the Sub-Commission. The proposed programme and budget for the IOCARIBE Sub-Commission will be a matter of discussion during the Session and will be further discussed under Agenda Item 8.1.

32 IOCARIBE's contribution to the IOC Document on Programme and Budget (Document 35 C/5) was prepared and sent to IOC for its inclusion.

33 He reported on main achievements and challenges in the implementation of the Sub-Commission's Programme of Work and Budget globally and, particularly, in the IOCARIBE region.

34 The IOCARIBE Secretary also informed the Session on the evolution of the work of the Sub-Commission after the transfer and redefinition of responsibilities of the Head of the IOCARIBE Secretariat to the UNESCO Kingston Cluster Office for the Caribbean based in Kingston, Jamaica in 2009. He also reported on present developments towards the proposed re-establishment of a full-time permanent post for the IOCARIBE Secretary.

35 He also suggested that National Ocean Committees be created to facilitate communication between all countries, especially between the National Focal Points.

### 3.3 IOC RESOLUTION XXV-5 "TENTH SESSION OF THE IOC SUB-COMMISSION FOR THE CARIBBEAN AND ADJACENT REGIONS (IOCARIBE)"

36 The UNESCO/IOC Secretary for IOCARIBE introduced this item. He referred to IOC Resolution XXV-5 on the Tenth Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) adopted during the Twenty Fifth Session of the IOC Assembly held in Paris, June 16–25 June, 2009.

37 The IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) held its 10th Session in Puerto La Cruz, Bolivarian Republic of Venezuela, 22–25 October 2008. It discussed, in particular: (i) the development of the "Know-Why Network" and the LBS Protocol of the Cartagena Convention (Land-based sources of marine pollution); (ii) the review of the IOCARIBE-GOOS Steering Committee; (iii) a draft Memorandum of Understanding between IOCARIBE and the Caribbean Regional Fisheries Mechanism (CRFM), and the Interagency Agreement between UNESCO/IOC and UNOPS on the establishment of the Caribbean Large Marine Ecosystem (CLME) project unit at IOCARIBE in Cartagena, Colombia; (iv) the Caribbean Marine Atlas – an IODE initiative in the region.

38 The UNESCO/IOC Secretary for IOCARIBE also referred to the state of implementation of the four Recommendations adopted during the Session:

#### Recommendation SC-IOCARIBE-X.1 Administrative Arrangements for the IOCARIBE Secretariat.

The creation of a permanent post for the IOCARIBE Secretary was considered by the IOC Executive Secretary to be included in the IOC Budget for 2012–2013.

#### Recommendation SC-IOCARIBE-X.2 Participation of the IOCARIBE Sub-Commission in the Fiftieth Anniversary of IOC.

As part of Colombia's contribution to the 50th Anniversary commemorative activities, IOC UNESCO was invited to participate in the International Maritime Fair (Cartagena de Indias, 19–22 May 2010) and to have its own exhibition with posters highlighting main IOC activities carried out by its Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) in the Caribbean Region. Mr Javier Valladares, IOC Chair, was invited as special lecturer of the scientific conference to the Fair and gave a presentation on "Perspectives of Marine Sciences on the Future of the Oceans".

During the 8th Cuban Congress on Marine Sciences (COLACMAR 2009, October 26–30) a special session was dedicated to the IOC Anniversary held in conjunction with the events of the 50 years of marine sciences in Cuba. He also referred to the celebrations of the Oceans Day on June 8. A Director General's Regional Consultation with the National Commissions of UNESCO in Latin America on the Draft Programme and Budget for 2012–2013 (36 C/5) was held in Port of Spain 4–9 July. On that consultation UNESCO staff and the Director General consulted about main IOC priorities in the region and needs on capacity building. One of the outcomes was the interest of SIDS on ways to adapt to the impacts of climate change in their economies, considering that tourism is one of their major income sources. IOC can help countries to develop coastal programmes and national policies.

Recommendation SC-IOCARIBE-X.3 Nutrient and Sediment Reduction in the Wider Caribbean.

The ICAM Project "Demonstrated Approaches for Nutrient and Sediment Reduction at Selected Pilot Study Areas in the Wider Caribbean Region," adopted at IOCARIBE-X, is entering the PDF-A Phase. Initially, it was agreed that UNDP will act as the implementing agency, and UNESCO IOC, through its Regional Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), will act as the Executing Agency of the Project.

Recommendation SC-IOCARIBE-X.4 Programme and Budget for 2009–2011.

A table summarizing the Draft Budget was presented for each programme. The IOCARIBE Secretary reiterated the importance of the Board, which he noted to be very active. That is one of the key for success along with the commitment of Member States. However, the Sub-Commission has higher expectations regarding funding. The lesson learned through this process is that it is difficult to raise funds. However, if countries' priorities are reflected and matching the Sub-Commission's priorities, then they will support the work of the Sub-Commission. Concerning human resources, only two people are assisting in the office. He mentioned the agreement with the Dalhousie University for having three Interns (Junior Professionals) for six months at the IOCARIBE Secretariat working on Capacity Building, ICAM and GOOS. To strengthen the work of the Secretariat, he urged countries increasing their support. National Focal Points should have closer contact with the programmes going on in the region. Countries should also have more involvement with the UNESCO National Commissions.

39           Brazil reported the involvement of the Ministry of Science and Technology in the Fiftieth Anniversary of the IOC through the first transatlantic vessel.

40           Barbados acknowledged the tremendous work of the IOCARIBE Secretary in performing two different jobs in two different countries. She expressed her concerned about the current lack of funding for two separate positions. Barbados thanked the continuous and consisted support received from the Government of Colombia in supporting the work of the IOCARIBE Secretariat. IOC is promoting the conformation of national ocean committees. Barbados is a member of the Executive Board of UNESCO. Regarding communications, it was reiterated the need to use available technology such as teleconferences and internet meetings for increasing communication and follow-up during the intersessional period.

41           Several countries seconded Barbados statement for the need to create two separate posts for the IOCARIBE Secretary and the UNESCO Science Programme specialist.

42 The United States emphasized on the need for coordination at the national level. The US created a National Committee for IOC which is a non-governmental group of experts, and presents the recommendation to the National Commission of UNESCO directly.

43 Panama thanked the IOCARIBE Secretary for his consistent report. He stressed the need to know each National Focal Point for the different programmes and the need to maintain a direct contact.

44 Barbados recalled that Member States have the responsibility and the authority in UNESCO to have the budget allocated.

45 **The Sub-Commission noted with satisfaction** the degree of commitment of the Sub-Commission on the fulfilment of approved recommendations.

46 **The Sub-Commission urged Member States** to encourage IOC and UNESCO to fund the establishment of the permanent post for the IOCARIBE Secretary.

47 **The Sub-Commission approved** [Recommendation SC-IOCARIBE.XI-1](#).

### 3.4 PROGRAMMED ACTIVITIES FOR 2012–2013

48 The UNESCO/IOC Secretary for IOCARIBE introduced this item. He referred to the work of the Sub-Commission.

49 The IOCARIBE Secretary decided to discuss this matter after the presentation of the progress report of the programmes. It will be further discussed during agenda item 8.1.

## 4. POLICY ISSUES

### 4.1 IOC CURRENT POLICY ISSUES – DEVELOPMENT AND PERSPECTIVES

50 The IOCARIBE Vice-Chairperson introduced this item. He referred to the development and perspectives of IOC policies and their relationship to the regional work of the Sub-Commission.

### 4.2 IOC BIENNIAL STRATEGY FOR 2012–2013

51 Dr Mitrasen Bhikajee, IOC Deputy Executive Secretary, introduced this agenda item. He referred to the work of the Commission and presented the Session with the IOC Biennial Strategy for 2012–2013 as adopted by the Assembly through Resolution XXIV-2.

52 The Draft IOC Biennial Priorities and Implementation Strategy for 2012–2013 is built around the four High-Level Objectives adopted by the Medium-term Strategy 2008–2013 (Resolutions EC-XXXIX.1, XXIV-2, EC-XLI.5, XXV-14). Based on indications already provided by IOC Governing Bodies and recommendations from Subsidiary Bodies, and taking into account emerging issues and programme continuity, the Secretariat has compiled a preliminary list of biennial priorities and expected results to be considered and adopted by the Assembly at its 26th Session in 2011.

53 He reminded the Session of the importance of the four high-level objectives of the IOC Biennial Strategy, which are:

1. Prevention and reduction of the impacts of natural hazards
2. Mitigation of the impacts of, and adaptation to climate change and variability
3. Safeguarding the health of oceans ecosystems.

4. Management procedures and policies leading to the sustainability of coastal and ocean environment and resources.

54 Reference was made to the Report on the Status of IOC Subsidiary Bodies (Doc IOC/EC-XLI/2 Annex 5). Several Member States noted that this provided valuable information on the contribution of subsidiary bodies to achievement of the High-Level Objectives of the Medium-Term Strategy 2008–2013.

55 The IOC Assembly at its 25th session (Paris, 16–25 June 2009) established, through Resolution XXV-2, an Open-ended Intersessional Working Group to conduct an objective and comprehensive assessment of IOC's regional activities and prepare a report for consideration by the Assembly at its 26th session in June 2011. To this end, a questionnaire to support the work of the Open-ended Intersessional Working Group on IOC's Regional Activities was sent to all IOC Focal Points in November 2010 to be completed on-line in three languages, English, Spanish and French.

#### 4.3 IOCARIBE STRATEGIC SCIENCE PLAN AND RELATED SERVICES FOR 2006-2016 — IMPLEMENTATION 2011–2013

56 The UNESCO/IOC Secretary for IOCARIBE introduced this item.

57 The IOCARIBE Strategic Science Plan, adopted by the Sub-Commission at its Tenth Session, summarizes the implementation of scientific programmes of the Sub-Commission and its strategic planning. The objectives of the IOCARIBE Strategic Science Plan are to: (i) support strategic planning of IOCARIBE Member States in relation to the development of their marine sciences, oceanic observations and associated services; (ii) facilitate the coherent management of regional programmes related to the marine-coastal environment and its resources; and (iii) strengthen scientific basis for supporting regional programmes. The Plan defines the Main Lines of Action as: Oceans and Climate, Ocean Ecosystem Science, Marine Science for Integrated Coastal Area Management and Extreme and Dangerous Natural Events.

58 The plan is available on the Sub-Commission web site in English and Spanish.

59 The IOCARIBE Secretary emphasized the significance of IOCARIBE's contribution to the general message that UNESCO will deliver at Rio+20, as noted in IOC Circular Letter, 2379 about Preparation Process for the United Nations Conference on Sustainable Development (UNCSD) – Rio+20, signed by IOC Executive Secretary, Dr Wendy Watson-Wright. The IOCARIBE Secretary reminded the Sub-Commission that the implementation of the plan for 2006–2015 is a responsibility of the Members of the Board and IOCARIBE Member States.

60 The active role of the IOCARIBE Board was highlighted as one of the major elements and components which has allowed IOCARIBE to be successful in implementing its projects.

61 Jamaica suggested that the Strategic Science plan should act as a reference guide to be followed by the Board.

62 Brazil informed the Sub-Commission that their Ministry of Technology attended a preparatory meeting for Rio+20, during which the oceans received special attention. Brazil offered to provide IOCARIBE with a direct channel to those involved in the preparations for Rio+20.

63 **The Sub-commission acknowledged** with thanks the proposal from Brazil.

64 **The Sub-commission reaffirmed** the continued relevance of the IOCARIBE Strategic Science Plan.

## 5. REGIONAL PROJECTS

### 5.1 OCEAN SCIENCES SECTION

#### 5.1.1 Caribbean Large Marine Ecosystems (CLME)

65 The UNESCO/IOC Secretary for IOCARIBE introduced this item.

66 The CLME project (Doc. IOCARIBE-CLME PDF-B) encompasses 25 GEF-eligible countries and 19 associated territories. The overall objective of the project is the sustainable management of the shared living marine resources of the Caribbean.

67 An Interagency Agreement was signed between the UN's UNESCO/IOC and UN's Office for Project Services (UNOPS) for the implementation of the four-year Caribbean Large Marine Ecosystem (CLME) Project. The Project was approved by the Global Environment Facility (GEF) in April 2008 and began in May 2009. It has a total budget of USD 56 million; comprising USD 7.2 million in GEF funding and USD 48.8 million in cash plus in-kind support by government and multilateral donor agencies. The Project Coordinating Unit (PCU) was established in the offices of the IOCARIBE Secretariat in the city of Cartagena in May 2009. UNDP is the implementing agency, UNOPS is in charge of administrative aspects of the project and the IOC, through IOCARIBE, is the Lead Technical Agency.

68 The First CLME Project Steering Committee Meeting and Inception Workshop were held in Cartagena, Colombia, in October 2009. The Meeting of Project Advisory Group (PAG) and the 2nd CLME Steering Committee meetings were held in Panamá from 16–18 November, 2010. During the Steering Committee meeting, the role of the National Focal Points and the identification of possible national committees involving high level decision makers and Stakeholders in the CLME Strategic Action Programme was discussed. In a preliminary survey among 19 countries that were present at the meeting, 15 of them had already identified possible National Committees suitable for this purpose. Important milestones of the project were also defined such as the timeframe for the Transboundary Diagnosis Analysis that should be ready in the first quarter of 2011 and the Strategic Action Programme by December 2012.

69 **The Sub-commission expressed** its continuing support to the CLME Project.

#### 5.1.2 Harmful Algal Blooms (HAB-ANCA)

70 Mr Ernesto Mancera, Regional Project Coordinator (RPC) of the Working Group on Harmful Algae Blooms in the Caribbean and Adjacent Regions (HAB-ANCA), introduced this item and reported on events in the region since the 4th regional Science Planning Workshop on Harmful Algal Blooms in the Caribbean and Adjacent Regions held on 22–24 May 2007 in San Andres Islas, Colombia.

- (i) In September-2009, Vera Trainer from PICES (North Pacific Marine Science Organization) group, assisted experts from Guatemala to learn techniques to ensure seafood safety.
- (ii) ANCA focal point from Barbados requested the support of the IOC and the ANCA group to develop specific training activities in their country. A three phase programme was proposed: Phase 1; Workshop to facilitate a greater understanding of HAB events, a review of the draft HAB Response Plan, and a stronger relationship between ANCA, the Academia and the relevant government agencies from Barbados. Phase 2; Training in species identification and quantification, and Training in toxicity testing. Phase 3; Training in Data Management, and Training in Design of routine monitoring programmes. However, due to lack of resources the programme is not completed.

- (iii) During the First International Meeting on Environment, Climate and Health held in Bogota, Colombia 12–14 July 2010, a Keynote Speech was given on Harmful Algal Blooms and Climate. This Conference was also given at the Universidad Nacional de Colombia, Caribe Campus in San Andres Island.
- (iv) VI CONyMA 2010. Workshop on contamination and environment: “Ciguatera un riesgo potencial en el Caribe”, organized by the Centro de Investigaciones Pesqueras and the working group ANCA.
- (v) XIII Latin-American Congress on Marine Sciences, La Habana, Cuba. 26–30 October 2009.
- (vi) IV Word Conference on HABs. Crete, Greece.
- (vii) The focal points from Colombia and Cuba, with the support of Colombian National Institute for Health and Universidad Nacional de Colombia, Caribbean branch, promoted the organization and development of a “diploma on ciguatera as a potential risk to public health in the Caribbean”. The event has been scheduled to take place in San Andres Island, Colombia in July 2011.

71        Regarding development of awareness and communication, the HAB-ANCA Group has made significant progress in this aspect. An example of this effort is the publication in 2009 of Book in Spanish/English with the support of the Universidad Nacional de Colombia: “Ciguatera: Potential Risk for Humans: Frequent Questions” by authors from Cuba and Colombia: Arencibia-Carballo Gustavo; José Ernesto Mancera Pineda and Gilma Delgado Miranda.

72        Mr Mancera reported on the new restructuration process of the IOCARIBE Working Group on Harmful Algal Blooms. IOCARIBE Secretariat, requested IOC national Focal Points, to ratify or propose new ANCA focal points, and provide a supporting letter from their institution. In this sense, it is critical to ensure the effective interaction and communication between the national focal points, the Chair of the group and the Secretariat of IOCARIBE, as well as other HAB organizations involved in research on toxic algae and harmful algal blooms.

73        He referred to Main results of the Tenth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms (IPHAB) held at UNESCO Headquarters, Paris, from 12–14 April 2011. The Panel reviewed the actions completed during the intersessional period by each of the HAB working groups, and noted that continuous progress had been made and that the Recommendations of the Ninth Session had been followed to a large extent. The major achievements reported by the working groups include: (i) developments within GEOHAB including the launch of the GEOHAB Research Plans for the Core Research Projects in Fjords and Coastal Embayments and the development of a research plan for Benthic HABs; (ii) development of the regional activities within ANCA, FANSA, HANA and WESTPAC-HAB; (iii) the implementation of ten training courses and training-through-research projects; (iv) results from the ICES-IOC WGHABD and ICES-IOC-IMO WGBOSV; (v) the continued development of the integrated IPHAB-IODE Harmful Algae Information System (vi) the continued publication of the IOC *Harmful Algae News*; (vii) and the IOC co-sponsorship of international HAB conferences.

74        Considering the ANCA budget difficulties , it was proposed to the Panel that the IOC-HAB programme to consider the strengthening of the ANCA group as a priority for the next period, and that a special budget must be considered to develop the activities of this regional group.

75        Proposed work plan for the next intersessional period 2011–2012:

- a) There is a need for a better understanding and prevention of cyanobacterial blooms in the region. ANCA recommends each country to develop research programmes to identify the main factors associated with cyanobacteria blooms in coastal areas.

- b) Each country is encouraged to develop oceanographic studies (CTD profiles, surface currents, general circulation patterns) and meteorological data in their relevant geographical areas and to promote an integrated physical and biological approach to understanding HAB events in the region.
- c) ANCA is to work with the FANSA group to develop the Latin American Portal on Harmful Algae (algaenocivas.net). ANCA strongly recommends that each country contributes to the development of the portal by sending information to the Portal Editors.
- d) It is recommended that the experts of the region collaborate with the national authorities in the region to maintain and improve the existing monitoring activities to provide a safeguard to public health and to minimize the impact of HABs.
- e) National/local authorities must be aware about the importance of monitoring programmes for microalgae as well as for the environmental factors associated with their occurrences. Also, they should have knowledge of the presence of toxins on the marine products and the socioeconomic impact of HAB issues.
- f) Promote the update of regional reports and information into HAEDAT and HAIS elements. It is necessary to motivate the national representatives to send their information. Also it is needed to define the strategies to consolidate periodic data submission and quality assurance of the data.
- g) Promote the HABMAP initiative in ANCA region which will allow the development of regional atlas of toxic species distribution.
- h) Seek funding to organize the three regional workshops to address the HAB research priorities in the area: (i) the Ciguatera phenomena needs special attention to improve the analytical methods for the detection of the toxins, and an inexpensive method is required in order to protect the public health of the region; (ii) the *Pyrodinium bahamense* blooms and related phyto-toxins in the central Pacific need to be focused in different scenarios (hydrology of the region, phyto-toxins monitoring and methodology, north-ward extension of this species); and (iii) the *Gymnodinium catenatum* blooms and related phyto-toxins needs to be addressed in order to standardize their analyses.
- i) HAB Programme to support organising a Regional training course on species identification, toxin chemistry and toxicology, design of monitoring, and management on Ciguatera in the Caribbean, October of 2011 is proposed in Mexico.
- j) Ensure effective interaction and communication with WESTPAC and IOC-Intergovernmental Panel on HAB, as well as other regional intergovernmental (NOWPAP, PEMSEA, PICES) and non-governmental (e.g., SCOR) organizations involved in research on toxic algae and harmful algal blooms.
- k) To consider the invitation of Mexico to organize the V-ANCA meeting in October 2011, in a Mexican Caribbean city with following agenda: (i) state of HABs problem in each ANCA country; (ii) discuss the monitoring programmes for the detection of harmful phytoplankton species and marine phycotoxins in water, fishes and shellfishes; (iii) analyze the possibilities to establish a cooperative work between researchers of the countries and other organizations; (iv) discuss needs and institutional plans on publications and/or courses; (v) analyze the needs of increased capacity for the study of HAB in each country, both in human resources, infrastructure and equipment; (vi) current state of the development of the Harmful Algae Information System (HAIS), (vii) regional information incorporated into HAEDAT and analysis of the generated regional maps; (viii) look for alternative financial support from OEA, WHO, and other institutions/organizations, for the capacity building, the development of research projects and monitoring programmes; and, (ix) explore the possibility for the development of research proposals focused on science issues on Ciguatera and PSP, and their association with the environmental conditions.

Tobago also referred to the importance of public education & awareness on harmful algal blooms.

77 Barbados raised the issue about some funding possibilities to be explored.

78 Concerning taxonomy, Mr Mancera recalled that most countries still use simple methods and tools.

79 **The Sub-commission adopted [Recommendation SC-IOCARIBE-XI.2](#).**

### **5.1.3 Integrated Coastal Area Management (ICAM)**

80 Dr Lorna Inniss from the Barbados Coastal Zone Unit CZMU introduced this item and presented an overview on recent development of the ICAM Project.

81 She recalled the Session about the convenience of having a dedicated website for ICAM in Spanish and English (<http://ioc3.unesco.org/icam-lac>). This website reports national and regional information on existing initiatives as well as information resources on capacity building, science and technology, and governance issues.

82 With the purpose of updating the ICAM management plan; Dr Inniss informed the Session that a Workshop was convened by IOC UNESCO in cooperation with the Barbados Coastal Zone Management Unit (CZMU). The Caribbean Regional Workshop on ICAM for the English Speaking Caribbean States was held in Bridgetown, Barbados, 16–18 March 2011. The Meeting was attended by 22 participants representing Antigua & Barbuda, Barbados, Curacao, Grenada, Guyana, Jamaica, Saint Lucia and Trinidad & Tobago. The main objective of the meeting was to assist Member States in building the resilience of SIDS' economies mainly dependant on coastal tourism using knowledge and expertise of the CZMU of Barbados for developing their own capacity to manage coastal areas and to conduct a national assessment for capacity building.

83 The meeting updated the ICAM management plan for the Caribbean Small islands incorporating economic and social issues as well as recent priorities of climate change adaptation and coastal hazard management. It was also agreed to conduct national assessments of capacity, science and technology and governance structures collated into a regional assessment. The Barbados Coastal Planning System was presented to developers attending the meeting and the Barbados Coastal Zone Management Plan. The group agreed to complete a 10 year project document with a five-year Implementation Plan to be coordinated jointly with the IOC.

84 Colombia raised a question about the inclusion of social or cultural variables other than biophysical in decision-making for coastal issues. While the CZM recognized these variables, its mandate is strictly related to science. Following the delivery of the CZM's application to the Ministry of Planning, social aspects are able to be incorporated.

85 Curacao asked if invasive species were also considered.

86 Dominican Republic asked how erosion is calculated. Dr Inniss indicated that a beach profile is conducted every quarter at the minimum to determine the erosion process.

87 In terms of capacity, the level of the Barbados programme is well advanced. Sharing this expertise is critical to support other countries coastal management. As an example, St Lucia is proposing to establish a CZM Unit with Barbados' support.



88           Trinidad & Tobago asked about the human capacity. The CZM has the expertise to do a wide variety of tasks, from numerical modelling to capacity modelling. Every project has a fellowship for a Master's degree, and consultants are also contracted.

89           Panama raised a question about the control of coastal erosion. Dr Inniss explained they divide the beaches into different sections based on particular geomorphological characteristics.

90           Trinidad & Tobago raised a question about pollution. From 1991–1995 an institutional strengthening programme was performed in marine pollution. The Environmental Protection Department is responsible of marine pollution, including land-base sources of pollution.

91           Brazil asked how the numerical models were validated and which data is needed. In this case models use high resolution coastal topography and aerial photographs of the entire islands.

92           **The Sub-commission acknowledged** Barbados work in CZM and Integrated Costal Area Management.

#### *5.1.3.1      Nutrient and Sediment Reduction in the Wider Caribbean Region*

93           Dr Clement Lewsey, IOCARIBE Vice-Chairperson, introduced this item and described the ICAM Project: Demonstrate Approaches for Nutrient and Sediment Reduction at Selected Pilot Study Areas in the Wider Caribbean (Doc. IOC/SC-IOCARIBE-IX/Inf. 4) proposed by NOAA and adopted by Member States at IOCARIBE-X in Puerto La Cruz, Venezuela, October 2008.

94           The main objective of the project proposal is to demonstrate best management practices at the watershed level to control and reduce nitrogen, phosphorous and sediment loadings from nonpoint sources in the Caribbean region. The project proposes that several watersheds be selected for the study. Based on a preliminary assessment, it is recommended that Barbados, Grenada, Dominica and Trinidad & Tobago be included in the project.

95           He informed the Session that the project is in its PDF-A phase and that, after a series of talks with GEF it was advised to include this project as a part of IWCAM second phase. Agreement was reached with the United Nations Environment Programme (UNEP), who is the Implementing Agency for the Project.

96           Barbados recalled that the responsibility of project coordination lies among countries, and that it is necessary to ensure that countries follow through with the Recommendation approved during the last session and track the effective implementation of the components for which they are responsible.

#### **5.1.4 UN Regular Process on Global Reporting and Assessment on the State of the Marine Environment (GMA)**

97           Ms Elizabeth Tirpak, USA, introduced this item. She provided the Sub-commission a description of the origin, status and IOCARIBE interest in the conduct of the Regular Process for the Global Reporting and Assessment of the State of the Marine Environment, including socioeconomic aspects (hereinafter "Regular Process").

98           As described in detail in official documents available on the website of the UN Division of Ocean Affairs and Law of the Sea, the Regular Process evolved out of recommendations emerging from the 2002 World Summit on Sustainable Development which were later endorsed by the UN General Assembly regarding the need for regular assessment of the oceans. Then, as further determined by the UNGA, an Assessment of Assessments was conducted and the resulting report was considered by an Ad Hoc Working Group, which will meet at the United

Nations 27–28 June 2012 to finalize documents (also available on the DOALOS website) that will further shape the first cycle of the Regular Process.

99 Ms Tirpak encouraged IOCARIBE to consider how, through the Regular Process, IOCARIBE Member States could address capacity and research priorities of the region. After providing an overview of IOCARIBE Member State involved in the Regular Process thus far, Ms Tirpak also suggested that IOCARIBE could facilitate Member State participation in all aspects of the Regular Process, including the leveraging of events for the conduct of the regional Regular Process workshop, defining needed assessment capacity for the region, and the identification of expertise to serve in the pool of experts to the Regular Process.

100 Dr Lorna Inniss, CARIBE-EWS Chair, Delegate of Barbados to IOCARIBE, and Co-Chair of the Regular Process Group of Experts, encouraged IOCARIBE representatives to consider the documentation and engage their participants to the next meeting of the AHWG.

101 **The Sub-commission adopted [Recommendation SC-IOCARIBE-XI.3](#).**

## 5.2 OCEAN OBSERVATION AND SERVICES

### 5.2.1 CARIBE-EWS — Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions. IOC Intergovernmental Coordination Group

102 Upon the request of the Chair, Dr Bill Proenza introduced this item by providing an overview of the tsunami risk in the IOCARIBE region through his presentation “El Peligro Olvidado - the Forgotten Danger”.

103 He noted that the small geographical size of the Caribbean means that warning times are reduced. With the many tsunami-genic sources in the Caribbean, and the increase in coastal populations, including from increased tourism, the Caribbean region is considered at “very high risk” for tsunamis. He noted that a Caribbean Tsunami Warning Center has been proposed in Puerto Rico to facilitate the sharing of regional expertise, increase cultural insight and achieve faster early warning systems.

104 Following his remarks, Dr Lorna Inniss, Chairperson of the IOC Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS), presented an overview of the activities of the Intergovernmental Coordination Group.

105 The Fourth Session of the ICG was held in Fort-de-France, Martinique, 2–4 June 2009. The meeting was attended by nearly 60 participants from 11 countries in the Caribbean Region and six regional organizations. The ICG reviewed the progress made during the intersessional period. The ICG decided to establish the Caribbean Tsunami Information Center (CTIC) and endorsed the Barbados proposal to host the CTIC. The ICG recommended as well, updating continuously the CARIBE-EWS Implementation Plan. The ICG endorsed the new and expanded core network of sea level stations in the region.

106 The Fifth Session of Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS-V), was held in Managua, Nicaragua 15–17 March 2010. The meeting was attended by 55 participants from 18 countries in the Caribbean Region, two regional organizations and a delegate from Kuwait. During the meeting, reports were made on the status of the establishment of a Tsunami Warning Centre for the Caribbean (CTWC). The US reported efforts to establish a CTWC at the University of Puerto Rico in Mayaguez. Venezuela and Nicaragua have also undertaken efforts and technical advances for the establishment of its establishment.

- 107 New Officers for the ICG/CARIBE-EWS were elected for the period 2010–2011. Dr Lorna Inniss (Barbados) was re-elected by acclamation as Chairperson. Ms Christa von Hillebrandt-Andrade (USA), Mr Francisco Garces (Venezuela) and Ms Frédérique Martini (France) were elected as Vice-Chairs.
- 108 Ms Inniss provided preliminary results of the CARIBEWAVE 2011 and LANTEX 2011 exercise in the Western Atlantic, Caribbean and Adjacent Regions held on 23 March 2011. The purpose of the exercise was to test the communications systems between the warning centres and the officially designated Tsunami Warning Focal Point (TWFP). Thirty four countries and territories of the Caribbean participated in the first regional tsunami exercise, CARIBEWAVE 2011 which was held jointly with LANTEX and was conducted under the framework of the UNESCO/IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE-EWS).
- 109 The Sixth Session was held in Santo Domingo, Dominican Republic, 26–29 April 2011.
- 110 All IOCARIBE Member States are members of the ICG. Dr Inniss provided a brief overview of the accomplishments of the ICGs four Working Groups. Working Group 1: Monitoring and Detection, Working Group 2: Hazard Risk Assessment & Research, Working Group 3: Warning Communications, Dissemination and Working Group 4: Preparedness, Readiness and Resilience.
- 111 The Sub-Commission was encouraged to identify the Tsunami National Focal Points as called for in IOC Circular Letter, 2170.
- 112 Dr Inniss also noted that the issuance of warnings is the sole responsibility of the individual countries. The ICG facilitates the use of best practices and consideration of a variety of methods of warning dissemination: sirens, church bells, flares, SMS mass messaging are some examples.
- 113 The Secretariat for the ICG continues to function in Paris and the Technical Secretary is Mr Bernardo Aliaga. A Caribbean Tsunami Information Center (CTIC) will be established in Barbados and facilitate the production and dissemination of educational materials for the region. Dr Inniss described the ICG efforts in post-event assessment of the warning system. IODE encouraged collection of metadata in these assessments to enhance the long-term utility of the assessment.
- 114 CRFM asked how, at the national level the message is disseminated to the population. ICG ensures that the protocols are met for submitting alerts to countries. The responsibility for spreading the message inside the country relies on the country. Jamaica asked about the communication protocol, and Dr Inniss indicated that a draft protocol has been made available to countries and is also available on the ICG website.
- 115 Brazil noted the challenge of simultaneous inland flooding and extreme winter waves for which more work is necessary. Some delegates requested further explanation of Emergency Managers Weather Information Network.
- 116 Dr Proenza gave a presentation on this low-cost alternative to receiving warning information via the Global Telecommunications System.

### **5.2.2 Oceanographic Data and Information Exchange (IODC/ODINCARSA – LA)**

- 117 Mr Ariel Troisi, Regional Project Coordinator for ODINCARSA-LA and IOC/IODC Co-chair, introduced this item by providing a regional overview on recent developments of the International Oceanographic Data and Information Exchange (IODC) Programme. He also

referred to the 50th Anniversary of IODE and the IODE-XXI Committee meeting held in Liège, Belgium during March 2011.

118 He recalled that the Ocean Data and Information Network for the IOCARIBE and South American Regions (ODINCARSA-LA) was created primarily as a mechanism to assess the current status and potential development of national data centres and create the means for capacity development in South America and the Caribbean. ODINCARSA-LA has provided training, technology transfer in the region and it has compiled key information about the current status of ocean data and information management capabilities, as well as identifying relevant institutions and contact persons in South America and Caribbean regions.

119 Mr Troisi referred to the development of the Integrated Service Platforms and Information Networks for Ocean and Coastal Area Management (SPINCAM). This Project aims to establish an ICAM indicator framework in each country of the Southeast Pacific Region (Chile, Colombia, Ecuador, Panama and Peru) focused on environmental and socio-economic conditions within the context of sustainable development and integrated coastal area management. The Government of Flanders is the main donor of the SPINCAM project. The Project also develops national coastal marine atlas and a regional atlas. This, together with assisting with the further development of National Oceanographic Data Centres (NODCs) and Marine Libraries encompasses the involvement of IODE.

120 The Second Meeting of the Steering Committee of the SPINCAM Project was held in Lima, Peru between 20 and 21 October 2009 and the Third Meeting of the Steering Committee of the SPINCAM Project took place in Santa Marta, Colombia, 9–10 November 2010. The meeting was attended by the CPPS member countries (Chile, Colombia, Ecuador, Panama and Peru) as well as by representatives from CPPS, UNESCO/IOC, IOC/ICAM, IOC/IODE and the Government of Flanders (Belgium).

121 During the Meeting of the Steering Committee the importance of reinforcing institutional and personal networks was highlighted. The correct interrelationship between NTFP, NODCs and IODE coordinator was identified as essential for the progress of the project as well as the significance of taking advantage of the ODINCARSA Network as a tool in the development of the SPINCAM project.

122 A Planning Meeting was held on December 2009 where objectives and goals were revisited, performance indicators were adopted and a work plan for data and marine information was developed.

123 He additionally presented the objectives, current status and future plans of the Caribbean Marine Atlas.

124 Mr Troisi further stressed the importance of data and information management as cross-cutting activities to all observation and research activities, projects and programmes as well as the role and expertise of IODE with regards to standards, protocols and best practices.

125 **The Sub-commission adopted [Recommendation SC-IOCARIBE-XI.4](#).**

#### *5.2.2.1 Caribbean Marine Atlas*

126 Mr Ariel Troisi, Regional Project Coordinator for ODINCARSA, introduced this item. He referred to developments of the Caribbean Marine Atlas Pilot Project. This project is a joint initiative of nine countries in the Caribbean region (Barbados, Cuba, Dominica, Grenada, Guyana, Jamaica, Saint Lucia, Trinidad and Tobago, Turks and Caicos Islands).

127 The purpose of the CMA is to identify, collect and organize available geo-spatial datasets into an atlas of environmental themes for the Caribbean region as a support service to the

sustainable development and integrated management of marine and coastal areas in the region. The Caribbean Marine Atlas is an activity developed within the framework of ODINCARSA.

128 A prototype of the CMA is available with basic functionality, online at [www.caribbeanmarineatlas.net](http://www.caribbeanmarineatlas.net) and a regional marine data manager network has also been established. Phase 2 of the project is in progress and is geared towards expanding the capabilities of the CMA and the design and implementation of national atlases and capacity building for users.

129 The First Review and Planning Workshop for Caribbean Marine Atlas (CMA) was held in (Castries, St Lucia 2–5 August 2010) and a Caribbean Marine Atlas (CMA) is planned to be held in Barbados on 25–29 April 2011, Barbados.

130 With reference to Ocean Docs Latin America Meeting, the IODE committee at its 21<sup>st</sup> session recommended ODINCARSA for developing a work plan that included performance indicators.

131 Mr Troisi emphasized the importance of differentiating data from information, as many people confused the two.

132 He Referred to Recommendations of IODE-XXI, which recommended the establishment of the IODE steering group for OBIS and the IODE Working group on obis GE-OBIS.

133 The outline of the CMA: Importance of access to environmental data and the use of data management for decision making. Goals for the CMA: Regional data and distribution system to facilitate data management for decision making.

134 He referred to the Stakeholders CMA Meeting held in 2009. Main conclusions included regional priority issues, regional data access issues and regional data management issues. The CMA has initiated a series of Training Courses, with funding coming from Flanders (Belgium) for the 2nd Phase (2010–2013).

135 He also proposed the creation of a regional atlas for South America, to be published online. Recognizing that atlases currently exist for the Pacific region, the Caribbean and others, he suggested a full regional atlas be created, with the potential for cross-training people and sharing of expertise.

136 Trinidad & Tobago asked about a tentative timeline for the CMA and if the second phase will last two more years.

137 Trinidad & Tobago asked about the benefits of a regional project. The project has identified some priorities issues. Another goal is to enhance local and national capabilities.

138 Barbados highlighted that the Atlas is only as good as contribution of each country. Six countries are currently participating out of eight.

139 Dominican Republic informed the Sub-Commission that they are also working on the production of an atlas. Mr Troisi mentioned that their information layers can be incorporated into the full regional Atlas, but noted that each country is responsible for the quality of the data.

140 Trinidad & Tobago mentioned the need to build capacity. Within IODE they have been trying to have a regional training centre.

141 Jamaica highlighted the benefits of the project and informed about their active participation.

142 The IOCARIBE Secretary recalled that all IOCARIBE members have been invited to join the CMA. In the beginning was a pilot project with only some countries. One of the challenges would be the need to increase the man power. He also mentioned that in a few weeks a meeting will be held in Jamaica for the CMA jointly with NEPA. This is part of a series of visits in order to assist the countries in identifying their capacities to develop national marine atlases.

### **5.2.3 International Bathymetric Chart for the Caribbean and the Gulf of Mexico (IBCCA)**

143 The UNESCO/IOC Secretary for IOCARIBE introduced this item. He presented a review on main activities developed for collecting the data and producing the corresponding bathymetric charts.

144 He reported the Session that 80% of the remaining two sheets of the Chart has been completed for Bathymetric Chart for the Caribbean and the Gulf of Mexico has been completed. The chart is also available in paper.

145 The Tenth Session of the Editorial Board Meeting for the Bathymetric Chart of the Caribbean and the Gulf of Mexico IBCCA was held in La Habana, Cuba, 13 February 2009. The Meeting was attended by members of the Editorial Board and a representative from the International Hydrographic Bureau of Monaco.

146 During the Tenth meeting progress reports were presented from Colombia, Costa Rica, Cuba, Mexico, Venezuela and USA. It was agreed that Colombia will remain on the Chairmanship of the IBCCA Editorial Board for another period and the Mexican National Institute of Statistic and Geography (INEGI) will continue to be the leading editorial institution for the compilation of the chart. The Action Plan for the project was also reviewed.

147 Reference was made to the IBCCA webpage <http://www.ngdc.noaa.gov/mgg/ibcca/ibcca.html> where information about the chart as well as meeting reports of all meetings of the Editorial Board can be downloaded. This website is temporarily maintained by NOAA/NGDC.

148 The IOCARIBE Secretary recalled that Colombia remained on the Chairship of the IBCCA Editorial Board. He introduced the floor to Captain Esteban Uribe from the Colombian Oceanographic Commission (CCO) to present an overview of IBCCA's main activities and developments.

149 He mentioned that the project has been very successful and counts with the support of several hydrographic and meteorology institutions. He informed the Session that the INEGI has also published the chart in 3D constituting a very useful and interactive material. Sixteen sheets out of the nineteen sheets have been published. The challenge remains on achieving the final compilation.

150 He reiterated the importance of Member States in supporting the project in order to maintain and updated the IBCCA products. He also referred to the lack of communication between the members of the editorial board and stressed on the need to increase it.

151 Concerned was expressed to the fact that the Technical Coordinator Dr Dimitri Travin left the Intergovernmental Oceanographic Commission and to the restructuration process of the INEGI, the editorial institution in charge of the chart compilation.

152 The chairman responded that one of the recommendations made was that the technical coordinator supported the technical group. The Secretary encouraged Member States to provide guidance and clear indications for its final printing.

153 The representative of Barbados expressed her concerned about the completion process of the Chart considering that it has been reported during three IOCARIBE Sessions as pending



and that Barbados asked for concrete recommendation for completion updating and maintenance of the IBCCA project..

154        **The Sub-commission took note** of the progress report of IBCCA presented to the Session and **urged** to continue its support to IBCCA activities.

155        **The Sub-commission adopted** [Recommendation SC-IOCARIBE-XI.5](#).

#### **5.2.4 Global Ocean Observing System for the IOCARIBE Region**

156        Mr Douglas Wilson, IOCARIBE-GOOS Co-Chairman introduced this item.

157        IOCARIBE-GOOS was established in 1999 at the Sixth Session of the IOCARIBE Sub-commission. The first task of the IOCARIBE-GOOS Group of Experts was the preparation of the Strategic Plan (GOOS Report No.115), which remains relevant today. He informed the Session on main results of the IOCARIBE-GOOS Strategic Planning Meeting which was held in San Juan, Puerto Rico, 7–8 March 2011. The Meeting was attended by 14 participants from seven countries of the IOCARIBE Region. The work of the IOCARIBE-GOOS Steering Committee and the future of IOCARIBE-GOOS was reviewed to renew regional and member state commitments. An evaluation of the state of ocean observations and related initiatives going on in the Caribbean and adjacent regions.

158        The Meeting decided to disband the present ad hoc Steering Committee, transferring the responsibilities to the Sub-commission while an IOCARIBE-GOOS Working Group composed of nominated State representatives and additional experts be created. The meeting discussed Terms of Reference for the working group, and recommended developing a six-year Implementation which shall first address sea level and coastal meteorology components of the observing system. Establishment of National GOOS Committees for the IOCARIBE Region was also determined necessary.

159        The Strategic Planning meeting was organized in conjunction with the Third Regional Workshop in the Workshop Series of the GEO Coastal Zone Community of Practice (CZCP, Puerto Rico, 9–11 March 2011. The Workshop focused on specific needs, challenges and capabilities related to sustainable tourism of SIDS in the Caribbean and was organized in partnership with the Caribbean Regional Association (CaRA) for the Caribbean Integrated Coastal Ocean Observing System (CarICOOS), the Global Ocean Observing System (GOOS), the Global Terrestrial Observing System (GTOS), the United Nations Educational, Scientific, and Cultural Organization (UNESCO), and its Intergovernmental Oceanographic Commission (IOC).

160        The IOCARIBE-GOOS Co-chair also presented an overview of the GOOS Regional Alliances (GRAs). Following the GOOS strategies and principles, the GRAs are composed of national agencies and organizations committed to the regional implementation of global observation networks. For achieving these goals it is important to build the capacity of the individual regions to contribute and benefit from GOOS.

161        The Fourth GOOS Regional Alliance Forum was held in Guayaquil, Ecuador, 25–27 November 2008. Discussions during the meeting covered the role of the GRAs in furthering the goals of coastal GOOS, the governance of the GRAs by the IOC and GOOS Programme Office, interactions of GRAs with Large Marine Ecosystem programmes and other programmes.

162        The IOCARIBE Secretary recalled that GOOS is the flagship programme of IOC. The Tsunami of Sumatra in 2004 raised awareness of the value of ocean observations. Further, the IOCARIBE Secretary noted that ocean observations are critical for coastal management plans and that such observation also help to address challenges island States face regarding climate change and risk reduction.

163        **The Sub-commission adopted [Recommendation SC-IOCARIBE-XI.6](#).**

## **5.2.5 Global Sea Level Observing System (GLOSS)**

164        Mr Douglas Wilson, IOCARIBE-GOOS co-Chairperson introduced this item. He gave a presentation on the Status of Sea Level Network in the Caribbean and Adjacent Regions.

165        Mr Wilson described the plans for enhancing Sea Level Observations for CARIBE-EWS that includes upgrading the three sea level gauges belonging to SHOM (France) (Ile Royale, French Guiana, Fort de France, Martinique and Pointe-à-Pitre, Guadeloupe). The Martinique general council will upgrade its sea level gauge (le Prêcheur) and install a new tide gauge on the eastern coast of Martinique; Venezuela is planning several new installations; Several CCCCC/MACC stations need to be repaired and/or upgraded.

166        Also, US will be installing/upgrading stations as part of several projects: UHSLC/PRSN Grenada, Dominica, Turks and Caicos, San Andres Island (Colombia), Santa Marta (Colombia), Panama (Canal or Previous GLOSS location); NOS: Barbuda (Antigua and Barbuda); PRSN/Dominican Republic; Cabo Rojo (southwestern DR); PRSN/UNESCO/Haiti: Port au Prince; CTWP/ICSECA/UNESCO: Upgrade at least 1 MACC station (Barbados) and engage CCCCC.

167        Mr Wilson informed the Sub-commission about the Second UNESCO-IOC-CARIBE-EWS-GLOSS Caribbean Training Course for Operators of Sea Level Stations took place on 24–28 January 2011 in St. George, Grenada. The first course had been held June, 2008 in Mayaguez, Puerto Rico.

168        **The Sub-commission took note** of the progress report GLOSS activities.

## **6. CAPACITY BUILDING IN MARINE SCIENCES, SERVICES AND OBSERVATIONS: DEVELOPMENT OF A MAJOR ASSISTANCE PROGRAMME**

### **6.1 CAPACITY BUILDING PROGRAMMED ACTIVITIES**

169        The UNESCO/IOC Secretary for IOCARIBE introduced this item.

170        He referred to the main objectives of the Capacity-development section of IOC and introduced chronogram of activities and their links to the strengthening of the Member States capacity in marine sciences.

171        Since the Caribbean is one of the larger pools of scientific expertise, the challenge is the developing networks to transfer technology and knowledge to overcome economic challenges.

172        IOC's capacity building programme has targeted "institutional capacity" through teacher training programmes. ICG/CARIBE-EWS has provided a venue for sharing expertise among States. Several seminars and workshops have been organized by IOC for building capacities on institutions.

173        Barbados reiterated that capacity building has been a steady requirement from Member States attending the Session and is reflected in the progress reports of the scientific programmes of the Sub-commission.

174        The IODE-ODINCARSA Regional Project Coordinator and the Coordinator of the Marine Information Management (MIM) provided information to the Session on several self learning proposals such as the Ocean Teacher and acknowledged the value of National Focal Points in identifying those that can benefit most from such training opportunities.



175 CRFM informed the Session about a successful training workshop targeted for fisheries managers conducted in Belize.

176 **The Session recognized** that capacity building is a demand for science driven information and expertise.

177 **The Sub-Commission expressed support** to all IOC Capacity-building activities in the region.

## 7. INSTITUTIONAL AND LEGAL FRAMEWORK

### 7.1 STATUS OF COOPERATION WITH OTHER ORGANIZATIONS

178 The UNESCO/IOC Secretary for IOCARIBE gave a general introduction on the progress made in the established cooperation with international organizations and other regional programmes.

179 The Sub-Commission in close coordination with IOC continues to actively enhance and strengthen links with other United Nations Programmes and Organizations.

180 He informed the Sub-Commission that UNESCO and its Intergovernmental Oceanographic Commission has signed an agreement with the CTBTO—Comprehensive Nuclear-Test Ban Treaty for Nuclear Tests.

181 This network was meant as a monitoring mechanism to promote nuclear tests around the world after WWII, and is still one of the major networks and treaties today concerning nuclear activity. Only signatory countries to the CTBTO have the right to access the data, and since the IOC has signed an agreement with the CTBTO, all IOC Member States now have access to this data for forecasting purposes. This is part of the backbone seismic network for the tsunami early warning system.

182 Another important organization is SCOR, the Scientific Committee in Ocean Research, which was the precursor of the IOC with the International Council for Science–ICSU.

183 IOC is partnering with UN Agencies and programmes such as FAO, UNDP, and UNOPS and has a long partnership with WMO especially through JCOMM – the Joint Committee for Oceanography and Marine Meteorology.

184 In the region, a MOU with UNEP with the regional branch of UNEP RCU was signed in 2002.

185 WMO and UNEP work closely with the Sub-Commission. The hydrographic and oceanographic services of the navy play an important role and the navy is the backbone for developing oceanography in several Latin American countries.

186 Recently, IOC is partnering with UNDP for strengthening the resilience and for disaster risk reduction.

187 In March, the GEO Coastal Coastal Zone Community of Practice (CZCP) Workshop focused on the Caribbean and its tourism industry.

188 IOCARIBE also cooperates with the World Bank and the Inter-American Development Bank. Considering regional organizations CRFM, CDEMA particularly for tsunami issues, they have been playing a major role for awareness of natural disasters (OSPESCA, CEPREDENAC). The FAO regional office is also a very important partner.

189 Another partner for IOCARIBE in the region is CARICOM which has a tight link to the Caribbean Development Bank. The University of West Indies with its three campuses is another important partner, especially for small island state affairs.

190 He reiterated the importance of maintaining and nourishing these partnerships.

191 The status of cooperation has improved during the last years. Member States have the opportunity to use and improve this cooperation regionally that will allow better opportunities to implement IOCARIBE general strategy.

192 The representative of UNEP referred to the high level of cooperation maintained between UNEP and IOCARIBE. The "Know-why network" is another example of the cooperation between UNEP/CAR/RCU and IOCARIBE with the support from the Swedish Government. The objective of the network is the enhancement of capacities of the Caribbean countries to implement the protocol concerning Land-based sources.

193 He also referred to the cooperation in the implementation of the CLME project.

194 Barbados referred to cooperation with respect to the marine meteorological community. It is a good time for IOCARIBE to focus on better understanding the work of JCOMM and see how the region could benefit. The links are growing between the meteorological community and the oceanographic community.

195 Dominican Republic acknowledged all the cooperation in the region. Increased cooperation reflects on the results of the products.

196 Trinidad & Tobago raised a question for the possibility to gather all cooperating organizations together in a meeting for further discussing cooperation aspects.

197 CRFM continues to participate in the IOC capacity building programmes and has benefitted greatly with this cooperation and expressed the interest to strengthening the cooperation with IOC.

198 Curacao highlighted the cooperation they have maintained with JCOMM and WMO and underscored the important link between islands and their oceans.

199 UNEP noted that organizations are not closely following their mandates, and this is causing duplication in activities. He called for more accountability and better governance.

200 USA recognized the importance of cooperation and collaboration with many organizations, and especially with UNESCO/IOC and WMO. They recognized the IOC as the best venue for collaboration.

## **8. ADMINISTRATION AND MANAGEMENT**

### **8.1 DRAFT PROGRAMME AND BUDGET FOR 2012–2013**

201 The Vice-Chairperson introduced this item. He presented to the Session the document: SC-IOCARIBE-XI/2 Annex 2, "Progress Report on Budget Execution". The new administrative scheme of the Sub-Commission and the current situation of staff were presented.

202 He further reported on the present budgetary situation of the Sub-Commission and introduced new mechanisms to explore additional funding for scientific programmes.

203 **The Sub-commission approved [Recommendation SC/IOCARIBE-XI.7](#).**

## 8.2 ELECTIONS OF THE BOARD OF OFFICERS OF THE SUB-COMMISSION

204 The IOCARIBE Secretary introduced this item. The Nominations committee worked following established technical arrangements for the elections of the Officers of the Sub-commission as laid down in Appendix I of IOC Rules of Procedure. The list of nominations received was distributed. Members of the Board of the Sub-Commission were elected in their personal capacity as experts and are expected to serve the Sub-Commission and represent their Member States.

205 The members of the IOCARIBE Board of Officers are elected for a two-year period, and as part of their duties they should provide effective working relationships with active governmental organizations interested in marine science affairs and will guide and co-ordinate work of the Sub-commission.

### 8.2.1 Election of the Chairperson of the Sub-Commission

206 **The Sub-Commission noted** that there was only one candidate for the position of Chairperson. Ms Bonnie Ponwith from the United States seconded Barbados and Panama was **elected** by acclamation as Chairperson of the IOCARIBE Sub-commission.

### 8.2.2 Election of the Vice-Chairpersons of the Sub-Commission

207 **The Sub-Commission noted** that there was only one candidate for each of the three positions as Vice-Chairpersons. Noting that the candidates provide an equitable sub-regional representation, the following were **elected** by acclamation:

- Ms Pedzi Girigori (Curacao, Kingdom of the Netherlands) seconded by US and Barbados
- Mr Anthony Mckenzie (Jamaica) (second mandate) seconded by Barbados and Trinidad & Tobago
- Mr Francisco Brizuela Venegas (Mexico) seconded by Panama and Dominican Republic

The IOCARIBE Vice-chairperson and the IOCARIBE Secretary congratulated the newly elected Officers and thanked the outgoing members of the Board, Dr Guillermo Garcia (Cuba) and Mr Clement Lewsey (US), for their remarkable work.

## 8.3 DATES AND PLACE OF THE ELEVENTH SESSION OF THE SUB-COMMISSION

208 The UNESCO/IOC Secretary for IOCARIBE informed the Session that the Twelfth Session of the Sub-Commission will be held during the first quarter of 2013.

209 Member States proposed to have an extraordinary one-day meeting of the Sub-commission to focus on Rio+20 outcomes and recommendations, the day before the Twelfth Session of the Sub-Commission.

210 **The Sub-commission approved** having the proposed extraordinary meeting.

211 The Head of Panamá Delegation and also National Focal Point for IOCARIBE in Panama, Mr Arnulfo Sanchez, kindly offered to host the Twelfth Session of IOCARIBE, conditional on further approval of the Government of Panama.

212 **The Sub-Commission acknowledged** this offer with appreciation and **accepted** the invitation of Panama.

#### 8.4 THEME OF THE NEXT SCIENTIFIC SYMPOSIUM

213 On 19 May 2011 from 14 hrs to 16 hrs, a Discussion Panel was held at the Rosenstiel School Auditorium. Speakers discussed two issues: the need for regional capacity building in the marine and environmental sciences and the challenge of sustainable development within the context of predicted regional climate change. The moderator was Dr Peter Ortner, Director of CIMAS. Panelists invited:

- Mitrasen Bhikajee, IOC Deputy Executive Secretary
- Carlos Fuller, Deputy Director, Caribbean Community Climate Change Centre
- Ben Kirtman, Professor, University of Miami/ Rosenstiel School
- Frank Mueller-Karger, Professor, USF, College of Marine Sciences
- Jamie Sweeting, VP of Environmental Stewardship & Global Chief Environmental Officer, RCCL
- Fernando Miralles-Wilhelm, Associate Professor, FIU, Department of Earth and Environment

214 The Sub-Commission was invited to propose themes for the next Scientific Symposium to be held prior the Twelfth Session of the Sub-Commission during 2013. Panama proposed that "Tsunamis" be the theme of the Session. Brazil acknowledged the proposed theme, and suggested it be broadened to "Tsunamis and Other Marine and coastal Hazards." The delegates from all Member States agreed on this expanded theme.

#### 9. ADOPTION OF THE DRAFT SUMMARY REPORT AND RECOMMENDATIONS

215 **The Sub-Commission adopted** the summary report and seven (7) recommendations from the Eleventh Session, as reviewed during the item.

216 Complete list of recommendations is included in [Annex II](#) of this summary report.

#### 10. CLOSURE

217 The UNESCO/IOC Secretary for IOCARIBE thanked on behalf of the Sub-Commission, the excellent local facilities provided by the host institution the University of Miami and the local organizing committee headed by Dr Peter Ortner. He extended his appreciation to the members of the Secretariat and local staff for the hospitality received.

218 He delivered an appreciation award to Dr Ortner on behalf of the IOCARIBE Sub-commission in recognition for all of the support received. The award is a pre-Columbian winged fished "of mythical significance because of its power over two elements: water and air" (San Agustin Culture, 100 BC-500 BC, Gold Museum, Bogotá, Colombia).

219 The Deputy Executive Secretary, Mr Mitrasen Bhikajee, addressed the Session. He thanked the University of Miami for hosting the Session as well as the Government of the US. He referred to the IOCARIBE Sub-Commission as one of the most active Subsidiary Bodies of IOC. He also thanked all delegates and participants, local staff, interpreters and supporting personnel. In particular he expressed his appreciation to the UNESCO/IOC Secretary for IOCARIBE, the Board of Officers and the IOCARIBE staff who organized the Session.

220 The Eleventh Intergovernmental Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions SC-IOCARIBE-XI was closed at 18:30 hrs on Friday 20 May 2011.

ANNEX I

**AGENDA**

**1. OPENING**

**2. ADMINISTRATIVE ARRANGEMENTS**

2.1 ADOPTION OF THE AGENDA

2.2 DESIGNATION OF THE RAPPORTEUR FOR THE SESSION

2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

**3. REPORT OF THE IOCARIBE SECRETARY  
ON INTERSESSIONAL ACTIVITIES**

3.1 STATEMENT OF THE CHAIRMAN

3.2 REPORT BY THE SECRETARY ON PROGRAMME AND BUDGET

[Rule of Procedure No. 8.1 (b,c); Rule of Procedure 49.3; Rec. SC-IOCARIBE-IX.13]

3.3 IOC Resolution XXV-5 "TENTH SESSION OF IOC SUB-COMMISSION FOR THE CARIBBEAN AND ADJACENT REGIONS (IOCARIBE)

3.4 PROGRAMMED ACTIVITIES FOR 2012 – 2013

[Rule of Procedure No. 8.1 (b,c); Rule of Procedure 49.3]

**4. POLICY ISSUES**

4.1 IOC CURRENT POLICY ISSUES – DEVELOPMENT AND PERSPECTIVES

4.2 IOC DRAFT MEDIUM-TERM STRATEGY 2014-2019

4.2.1 **IOC Biennial Strategy 2012–2013** [Resolution XXIV-2]

4.3 IOCARIBE STRATEGIC SCIENCE PLAN  
AND RELATED SERVICES FOR 2006–2016. IMPLEMENTATION 2011-2013  
[Rec. XXI-14; Rec. SC-IOCARIBE-VI.10 - 11; Rec. SC-IOCARIBE-VIII.1; Rec. SC-IOCARIBE IX.1]

**5. REGIONAL PROJECTS**

5.1 OCEAN SCIENCES

**5.1.1 Caribbean Large Marine Ecosystem (CLME)**

[Rec. SC-IOCARIBE-VI.5; Rec. SC-IOCARIBE-VIII.2; Rec. SC-IOCARIBE-IX.2, Rec. SC-IOCARIBE-IX.3]

**5.1.2 Harmful Algal Blooms (HAB-ANCA)**

[Rec. SC-IOCARIBE-VI.8. SC-IOCARIBE-VIII.3; Rec. SC-IOCARIBE-IX.4]

**5.1.3 Integrated Coastal Area Management (ICAM).**

[Rec. SC-IOCARIBE-VIII.5; Rec. SC-IOCARIBE-IX.5]

*5.1.3.1 Nutrient and Sediment Reduction in the Wider Caribbean Region*  
[Rec. SC-IOCARIBE-X.3]

**5.1.4 UN Regular Process on Global Reporting and Assessment on the State of the Marine Environment (GMA)**

**5.2 OCEAN OBSERVATION AND SERVICES**

**5.2.1 Caribe-EWS - Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions. IOC Intergovernmental Coordination Group**

[Res. EC-XXXV.5; Rec. SC-IOCARIBE-VII.2 Rec. SC-IOCARIBE-VIII.8; Res. IOC-XXIII.13; Rec. SC-IOCARIBE-IX.6]

**5.2.2 Oceanographic Data and Information Exchange (IODE)/ Ocean Data and Information Network for the Caribbean and South America (ODINCARSA)**

[Res. EC-XXXV.6; Rep. SC-IOCARIBE-VII, Item 6.3.1.2, para. 143,144; Rec. SC-IOCARIBE-IX.7]

*5.2.2.1 Caribbean Marine Atlas*

**5.2.3 International Bathymetric Chart for the Caribbean and the Gulf of Mexico (IBCCA)**

[Rep. SC-IOCARIBE-VII Item 6.3.2.1, para. 154,156,158; Rec. SC-IOCARIBE-VI.9; Rec. SC-IOCARIBE-IX.8]

**5.2.4 Global Ocean Observing System (GOOS): IOCARIBE-GOOS**

[Res. EC-XXXV.5; Rec. SC-IOCARIBE-IX.9]

**5.2.5 Global Sea Level Observing System GLOSS**

[Rec. SC-IOCARIBE-V.5, Part C; Rec. SC-IOCARIBE-VI.6]

**6. CAPACITY BUILDING IN MARINE SCIENCES, SERVICES AND OBSERVATIONS: DEVELOPMENT OF A MAJOR ASSISTANCE PROGRAMME**

[Rec. SC-IOCARIBE-IX.10]

**6.1 CAPACITY BUILDING PROGRAMMED ACTIVITIES**

[Rec. SC-IOCARIBE-IX.10]

**7. INSTITUTIONAL AND LEGAL FRAMEWORK**

**7.1 STATUS OF COOPERATION WITH OTHER ORGANIZATIONS**

[Rec. SC-IOCARIBE-IX.11]

**8. ADMINISTRATION AND MANAGEMENT**

**8.1 DRAFT PROGRAMME AND BUDGET 2012–2013**

[Res. XXI-13; Rec. XXI Item 6.1 para. 418; Res. EC-XXXV-8; Rec. SC-IOCARIBE-IX.13; IOC Res. XXV-5]

**8.2 ELECTIONS OF THE BOARD OF OFFICERS OF THE SUB-COMMISSION**

[Rules of Procedure No.25(3) and Appendix I]

**8.2.1 Election of the Chairperson of the Sub-Commission**

**8.2.2 Election of Vice-Chairpersons of the Sub-Commission**

8.3 DATES AND PLACE OF THE TWELFTH SESSION  
OF THE SUB-COMMISSION

8.4 THEME OF THE NEXT SCIENTIFIC SYMPOSIUM

**9. ADOPTION OF THE DRAFT SUMMARY REPORT AND RECOMMENDATIONS**

**10. CLOSURE**

ANNEX II

**RECOMMENDATIONS**

Recommendation SC-IOCARIBE-XI.1

**PROGRAMME IMPLEMENTATION**

The IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE),

**Bearing in mind** the statement of the Chairman and the Report of the IOC Secretary for IOCARIBE at IOCARIBE-XI,

**Directs** the IOCARIBE Secretary to schedule virtual meetings of the Board twice per year, or as necessary to review the intersessional progress of IOCARIBE programmes;

**Directs also** the IOCARIBE Secretary to make available to member States an updated list of national focal points for all IOCARIBE programs; this list could be provided on the IOC website;

**Urges** IOCARIBE Member States to raise the visibility of IOCARIBE through regular briefings on the status of IOCARIBE programmes to their National Commissions for UNESCO and enhance national coordination through regular meetings of national IOCARIBE programme focal points;

**Urges further** IOCARIBE member States to ensure endorsement of the CLME Project by the national GEF focal points and expedite delivery of components of the Project to meet the deadlines;

**Endorses** the recommendations contained within the report of the ICAM Workshop (March 2011, Barbados) and instructs the IOCARIBE Secretary to facilitate efforts among Member States to address needs for ICAM capacity building and related technology transfer;

**Strongly encourages** Member States to ensure collaboration between national focal points for IOC and UNEP, in order to ensure that the objectives of the “Nutrient and Sediment Discharge Reduction Initiative” are met.

Financial Implications: None

Recommendation SC-IOCARIBE-XI.2

**IOC WORKING GROUP ON HARMFUL ALGAE IN THE CARIBBEAN  
AND ADJACENT REGIONS (HAB-ANCA)**

The IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE),

**Recognizing** that to improve our ability to mitigate impacts from HABs in the Caribbean and Adjacent Regions it is necessary to enhance the research capacity of Member States, and to implement a regional monitoring programme,



**Acknowledging** the progress achieved in capacity building by the ANCA group, particularly during the last biennium,

**Endorses** the Report from the Third IOC Regional Science Planning Workshop on Harmful Algal Blooms in San Andreas Island, Colombia, 22–24 May 2007;

**Reiterates** the need to have adequate financial resources to implement the Action Plan approved by Recommendations SC-IOCARIBE-VIII.3; SC-IOCARIBE-IX/3s;

**Urges** Member States to support regional collaboration by financial or in-kind contributions to ANCA to carry out its programme and Action Plan 2011–2012;

**Further Urges** IOC Executive Secretary to provide additional financial support for the implementation of the ANCA programme;

**Instructs** IOCARIBE Secretary to assist Member States in their search for necessary extra-budgetary resources.

### Recommendation SC-IOCARIBE-XI.3

#### **THE REGULAR PROCESS FOR THE GLOBAL REPORTING AND ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT, INCLUDING SOCIOECONOMIC ASPECTS (REGULAR PROCESS)**

The IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE),

**Considering** that States will review the state of the oceans during the United Nations Conference on Sustainable Development (UNCSD) in Brazil on 4–6 June 2012 and the United Nations Commission on Sustainable Development Review and Policy Years 2014 and 2015, during which the thematic issues will be highly relevant to the efforts of IOCARIBE,

**Acknowledging** the significance of the ocean's influence on climate and weather, and in the provision of ecosystem services for the economic and social well-being of States,

**Recognizing** that the first cycle of the Regular Process is valuable in establishing a baseline condition of the state of the marine environment, against which future cycles of the Regular Process could be compared,

**Anticipating** that the Regular Process will highlight the interconnectedness of the oceans leading to the necessity of regional and global collaboration,

**Urges** Member States to include an ecosystem approach in undertaking the Regular Process;

**Invites** Member States to actively participate in the Regular Process and to appoint experts to ensure that the first cycle (2010–2014) benefits from the region's expertise;

**Further urges** Member States, through the Regular Process, to promote best practices that enable sustainable use of resources, support ecosystem services and achieve coastal and ocean hazard risk reduction;

**Agrees therefore** that data management, integration, analysis and synthesis for decision making are the priorities for capacity building in the IOCARIBE region.

Recommendation SC-IOCARIBE-XI.4

**OCEAN DATA AND INFORMATION NETWORK  
FOR THE CARIBBEAN AND SOUTH AMERICAN REGIONS (ODINCARSA-LA)  
AND THE CARIBBEAN MARINE ATLAS PROJECT (CMA)**

The IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE),

**Recalling**, *inter alia*, Recommendations IOCARIBE VIII.6 and IOCARIBE IX.7,

**Acknowledging:**

- The adoption by IODE 20 of the Ocean Data Portal strategy
- The continuing development of the Ocean Teacher Academy
- The progress made by the Caribbean Marine Atlas Project
- The need for coordination between the CMA and other similar national and regional initiatives

**Urges** Member States to contribute to the Caribbean Marine Atlas project through allocations of human and/or financial resources to support its coordination and implementation;

**Requests** Member States to explore ways and means for the establishment of a regional training center(s) for MIM and MDM.

Recommendation SC-IOCARIBE-XI.5

**THE INTERNATIONAL BATHYMETRIC CHART FOR THE CARIBBEAN  
AND THE GULF OF MEXICO (IBCCA)**

The IOC Sub-commission for the Caribbean and Adjacent Regions - IOCARIBE.

**Acknowledging** the commitment and efforts made by participating countries and organizations in the IBCCA Project; as well as results achieved by the Project and the importance of its products and applications to integrated coastal area management and tsunami and other coastal hazards risks,

**Considering** that the Project is in its final phase and bearing in mind the important contributions to the GEBCO Project,

**Acknowledging also** the importance of having an updated product based on new bathymetric surveys and the need to identify an institution to lead this process,

**Requests** the IOCARIBE Secretary to collaborate with Member States to identify a Technical Coordinator and a regional institution responsible for the follow-up, updating and enhancement of the product;

**Urges** Member States to contribute their bathymetric data for the updating of the IBCCA Project.

Recommendation SC-IOCARIBE-XI.6

**IOCARIBE-GOOS**

The IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE),

**Recalling** SC IOCARIBE-X calling for Member States to establish National GOOS Committees,

**Appreciates** the dedicated efforts and commitment of the Ad Hoc Steering Committee of IOCARIBE GOOS and **agrees** that its duties will be assumed by the Sub-Commission;

**Encourages** Member States to establish national GOOS committees as the contacts for advancing IOCARIBE-GOOS at the national level;

**Decides** to establish an IOCARIBE GOOS Group of Experts to advise the Sub-Commission on technical, operational and programmatic aspects of the system;

**Calls** on Member States to nominate experts to the IOCARIBE GOOS Group of Experts.

Recommendation SC-IOCARIBE-XI.7

**PROGRAMME AND BUDGET FOR 2012–2013**

The IOC Sub-commission for the Caribbean and Adjacent Regions (IOCARIBE),

**Having considered** the report of the IOC Secretary for IOCARIBE on Programme and Budget 2012–2013,

**Recognizing with satisfaction** the effective work done by the IOCARIBE Secretariat in developing regional programmes and activities under present financial restrictions,

**Recognizing also with appreciation** the continuous support of the Government of Colombia to the IOCARIBE Regional Office in Cartagena, since its creation in 1986,

**Expresses its appreciation** to the Government of the United States of America for hosting the 11<sup>th</sup> Session of IOCARIBE, in Miami Florida, 17–20 May 2011;

**Approves** the Draft Biennial 2012–2013 IOCARIBE Programme and Budget, as annexed to this Recommendation;

**Instructs** the IOC Secretary for IOCARIBE to submit to the IOC Executive Secretary the proposed biennial 2012–2013 IOCARIBE Programme and Budget, and to distribute it to all IOCARIBE Member States after approval by the Assembly at its 26<sup>th</sup> Session in June 2011.

**Draft Budget for IOCARIBE Activities Execution 2012–2013  
as Recommended by IOCARIBE XI (in US dollars)**

|                                      | 2012           |                  | 2013           |                  |
|--------------------------------------|----------------|------------------|----------------|------------------|
| Programme / Activity                 | RP             | EXB              | RP             | EXB              |
|                                      |                |                  |                |                  |
| <b>GOOS/GLOSS</b>                    | <b>25.000</b>  | 260.000          | <b>25.000</b>  | 350.000          |
| <b>ICAM</b>                          | <b>20.000</b>  | 200.000          | <b>20.000</b>  | 250.000          |
| <b>GMA Regular Process</b>           | <b>5.000</b>   | <b>50.000</b>    | <b>5.000</b>   | <b>60.000</b>    |
| <b>ANCA</b>                          | <b>15.000</b>  | 135.000          | <b>15.000</b>  | 100.000          |
| <b>CLME</b>                          |                | 1.530.000        |                | 1.365.000        |
| <b>ODINCARSA</b>                     | <b>8.500</b>   | 40.000           | <b>25.000</b>  | 50000            |
| <b>CMA (IODE)</b>                    | <b>5.000</b>   | 80.000           | <b>10.000</b>  | 70.000           |
| <b>IBCCA</b>                         | <b>6.000</b>   | 15.000           | <b>6.000</b>   | 20.000           |
|                                      |                |                  |                |                  |
| <b>Tsunami &amp; Coastal Hazards</b> | <b>30.000</b>  | 500.000          | <b>100.000</b> | 600.000          |
|                                      |                |                  |                |                  |
| <b>Capacity Development</b>          | <b>25.000</b>  | 20.000           | <b>25.000</b>  | 30.000           |
| <b>Conference</b>                    |                |                  | <b>12.000</b>  | 20.000           |
| <b>IOCARIBE XII</b>                  |                |                  | <b>25.000</b>  | 60.000           |
| <b>TOTAL 1</b>                       | <b>139.500</b> | <b>2.830.000</b> | <b>268.000</b> | 2.975.000        |
| <b>IOCARIBE Secretariat</b>          |                |                  |                |                  |
|                                      |                |                  |                |                  |
| <b>Human resources IOC</b>           | <b>180000</b>  |                  | <b>180.000</b> |                  |
|                                      |                | 65000            |                | <b>65000</b>     |
| <b>Human resources EXB</b>           |                |                  |                |                  |
|                                      | <b>15000</b>   | <b>15000</b>     | <b>15000</b>   | <b>15.000</b>    |
| <b>Missions</b>                      | <b>5.000</b>   | 5.000            | <b>5.000</b>   | <b>5.000</b>     |
|                                      |                |                  |                |                  |
| <b>Board Meetings</b>                | <b>3.000</b>   | 2000             | <b>3.000</b>   | <b>2.000</b>     |
| <b>Running costs</b>                 | <b>20.000</b>  | 20000            | <b>20.000</b>  | <b>20.000</b>    |
| <b>TOTAL 2</b>                       | <b>203.000</b> | 42.000           | <b>208.000</b> | <b>42.000</b>    |
| <b>TOTAL</b>                         | <b>373.500</b> | <b>3.329.000</b> | <b>637.000</b> | <b>4.790.000</b> |

## ANNEX III

### STATEMENTS AND ADDRESSES

Eleventh Session of the IOC (UNESCO) Sub-commission for the Caribbean  
and Adjacent regions (SC-IOCARIBE-XI)  
Miami, USA, 17–20 May 2011

**Welcome Remarks by**  
**Dr Mitrasen BHIKAJEE, Deputy Executive Secretary of IOC of UNESCO**

Dr Clement Lewsey, Vice-Chairman of IOCARIBE, Officials of the US Government, Representatives of UN agencies, Representatives of other agencies present, IOCARIBE Delegates from the region, Dr Cesar Toro, Prof. Peter Ortner, ladies and gentlemen

On behalf of the Executive Secretary of the Intergovernmental Oceanographic Commission of UNESCO, I would like to thank you for sparing some of your time to attend this meeting of the most active of the IOC subsidiary bodies. I would also like to thank the US Government for hosting this meeting through the Cooperative Institute for Marine and Atmospheric Studies at the University of Miami Rosenstiel School of Marine and Atmospheric science.

As the focal point for ocean matters in the UN system, the IOC of UNESCO leads the promotion and coordination of ocean sciences and services. Our four high level objectives include: natural marine hazards, climate change and variability, health of ocean ecosystems and sustainability of coastal and ocean resources. The role of global oceans is critical, and their importance cannot be emphasized enough.

The IOC plans, coordinates and implements numerous programs that help to ensure our oceans are well understood, properly managed and also preserved for long-term sustainability. In the face of climate change, oceans are ever-important. Small island developing states (SIDS) in the Caribbean, the Pacific and off the coast of Africa are the most vulnerable and at high risk of climate-induced devastation such as rising sea levels, coastal erosion, marine hazards and increased hurricane activity. With their small sizes, isolated locations, disproportionately low GDP's and a reduced capacity for climate change adaptation (as compared to developed countries) SIDS lack the capacity to deal with environmental hazards and fluctuations. Paradoxically SIDS contribute the least to greenhouse gas emissions, yet they are the ones being affected the most. To address this issue, the IOC is currently working to build capacity of SIDS for climate change adaptation. Implementing adaptation measures will save money in the long run as compared to the cost of inaction. During future climate change discussions, it is imperative that the importance of global oceans be recognized by governments and intergovernmental bodies alike. The IOC is determined to increase the understanding of the ocean's role in climate variability, allowing countries to be better suited to mitigate impacts of climate change.

Promoting ocean science is a critical activity within the IOC, and we have developed various programs to help countries understand our oceans and have access to data which may guide their decision-making. The Integrated Coastal Area Management (ICAM) program provides innovative tools to support adaptation plans for climate change and improve integrated ocean and coastal management efforts. This allows countries to be better prepared in the face of climate change, thereby helping to safeguard the futures of these fragile states. As the climate changes, certain countries will be increasingly affected with heavy rainfall and tropical storms.

With the recent tsunami in Japan, it is undeniable that early warning systems are critical to protect humans from the forces of nature. We have taken on the important task of creating tsunami and natural hazard warning systems, as we recognize the importance of preparedness in ensuring minimal human and environmental damage. The IOC coordinates and promotes integrated and sustained monitoring, warning and mitigation systems for coastal and oceanic hazards such as hurricanes, tsunamis and storm surges in the Pacific, the Indian Ocean, the North-eastern Atlantic, the Mediterranean and the Caribbean. Providing adequate protection at local, regional and global scales against these marine hazards is the main goal of IOC.

Continued monitoring and assessment of our oceans is imperative to ensure up-to-date warning systems. The Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG/CARIBE EWS) provides assistance on tsunami risk reduction to Member States in the Caribbean region through decision-support tools that assist them in their coastal management efforts and allow them to better react to tsunamis and other coastal hazards. The warning system is advancing well, and the sea level network is being implemented progressively. Disaster preparedness does not come only from science-based information networks. Community level engagement and training is just as important. We have implemented various community-based hazard and assisted in developing vulnerability maps, response plans for tsunamis and other hazards, evacuation drills, emergency protocols for schools, sirens for early-warning mechanisms, community training sessions and we have even installed several tide gauge monitors.

It is essential that countries have access to up-to-date ocean data so that they have the right information to make decisions. The Caribbean Marine Atlas is yet another example of how we are working towards improving the management tools of our Member States. It is a joint initiative between 9 Caribbean countries that identifies, collects and organizes geo-spatial datasets into an atlas of environmental themes. This tool supports the sustainable development and integrated management of marine and coastal areas in the region. Moving forward, the IOC will continue to support the development of further integrated coastal area management systems, information network systems and climate change adaptation plans. For years, the IOC has invested time, money and effort into creating a system for wide-spread, global ocean monitoring. The GOOS program was created several years ago, and has proven to be extremely useful and widely accepted by oceanographic researchers, coastal managers, national meteorological and oceanographic agencies, hydrographic offices, marine and coastal industries, policy makers and the interested general public alike. The monitoring network and warning and awareness systems reduce the risk of climate change and increase the resilience of SIDS.

Regional Ocean Observing Systems are in operation throughout the Americas and the data is used to reduce risks from a broad range of threats associated with the oceans including waterborne toxins, storm surges, coastal flooding, unsafe marine transportation and changes in marine ecosystems. These systems have been developed to serve regional needs, but there is much to be learned, still. It is important that we facilitate information-sharing and transfer of technology between countries to enhance regional cooperation and increase capacity in the face of increasing marine hazards.

The IOC has prioritized an ecosystem-based approach to marine and coastal management when dealing with transboundary marine resources, as we understand that the inter-linkages that exist in nature need to be reflected in our global management activities. In order to support and promote this approach, we have implemented the Caribbean Large Marine Ecosystem (CLME) project to improve the management of shared living marine resources in 25 Caribbean countries. The project allows for the identification of the major issues and actions needed to achieve sustainable management of marine resources in the Caribbean. It also helps improve the shared knowledge base for transboundary living marine resources, thereby increasing regional capacity. This tool helps to recognize the importance of our oceans and marine ecosystems and promote integrated decision making among our Member States. The IOC will continue to promote this approach on an international scale as we recognize the need to

increase ecosystem-based thinking and approaches in scientific, social and economic research and planning.

With dozens of programs and projects already underway, the IOC will continue to support their coordination and implementation in the coming years. We remain dedicated to enhancing capacity for marine management and reinforcing our ocean and marine-related activities. For over 50 years, we at the IOC have been ocean stewards, helping to improve access to data, management tools and decision-support tools which reduce the negative impacts of human actions on our marine environments. Our top priorities at the IOC remain the promotion of the importance of our global oceans and strengthening of our knowledge of ocean sciences. This is the only way that we will be able to ensure the sustainability of our marine ecosystems and be able to live in harmony with our environment.

ANNEX IV

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ANNEX V

**LIST OF ACRONYMS AND ABBREVIATIONS**

|                    |                                                                        |
|--------------------|------------------------------------------------------------------------|
| <b>CARA</b>        | Caribbean Regional Association                                         |
| <b>CARIBE WAVE</b> | Caribbean First Regional Tsunami Exercise                              |
| <b>CARIBE-EWS</b>  | Caribbean Early Warning System                                         |
| <b>CARICOM</b>     | Caribbean Community                                                    |
| <b>CARICOMP</b>    | Caribbean Coastal Marine Productivity                                  |
| <b>CARICOOS</b>    | Caribbean Integrated Coastal Ocean Observing System                    |
| <b>CARSA DIR</b>   | Regional Directory of Experts                                          |
| <b>CCA</b>         | Causal Chain Analysis                                                  |
| <b>CCCCC</b>       | Caribbean Community Climate Change Centre                              |
| <b>CDP</b>         | Concept Development Projects                                           |
| <b>CEPREDENAC</b>  | Centro Coordinación para la Prevención de los Desastres Naturales      |
| <b>CICESE</b>      | Centro de Investigación Científica y de Educación Superior de Ensenada |
| <b>CIMAS</b>       | Cooperative Institute for Marine and Atmospheric Studies               |
| <b>CLME</b>        | Caribbean Large Marine Ecosystem                                       |
| <b>CMA</b>         | Caribbean Marine Atlas                                                 |
| <b>COLACMAR</b>    | Cuban Congress on Marine Sciences                                      |
| <b>CONYMA</b>      | Contamination and Protection of the Marine Environment                 |
| <b>CPACC</b>       | Caribbean Planning for Adaptation to Climate Change                    |
| <b>CRFM</b>        | Caribbean Regional Fisheries Mechanism                                 |
| <b>CTBTO</b>       | Comprehensive Nuclear Testban Treaty for Nuclear Tests                 |
| <b>CTD</b>         | Comparative Toxicogenomics Data base                                   |
| <b>CTIC</b>        | Caribbean Tsunami Information Center                                   |
| <b>CTWC</b>        | Caribbean Tsunami Warning Center                                       |
| <b>CZCP</b>        | Coastal Zone Community of Practice                                     |
| <b>CZMU</b>        | Coastal Zone Management Unit                                           |
| <b>DOALOS</b>      | UN Division for Ocean Affairs and the Law of the Sea                   |
| <b>FANSA</b>       | Freshwater Action Network South Asia                                   |
| <b>FAO</b>         | Food and Agriculture Organization (UN)                                 |
| <b>GEF</b>         | Global Environmental Facility                                          |
| <b>GEO</b>         | Global Environmental Outlook                                           |
| <b>GLOSS</b>       | Global Sea-level Observing System                                      |
| <b>GMA</b>         | Global Assessment of the State of the Marine Environment               |
| <b>GODAE</b>       | Global Ocean Data Assimilation Experiment                              |
| <b>GOOS</b>        | Global Ocean Observing System                                          |

|                        |                                                                                         |
|------------------------|-----------------------------------------------------------------------------------------|
| <b>COOP</b>            | Coastal Ocean Observations Panel                                                        |
| <b>GRASP GOOS</b>      | Regional Alliance for the South East Pacific                                            |
| <b>GTOS</b>            | Global Terrestrial Observing System                                                     |
| <b>HAB-ANCA</b>        | Harmful Algal Blooms for the Caribbean                                                  |
| <b>HAIS</b>            | Hybrid Artificial Intelligence Systems                                                  |
| <b>HANA</b>            | IOC Regional Network on Harmful Algae in North Africa                                   |
| <b>IBCCA</b>           | International Bathymetric Chart for the Caribbean and the Gulf of Mexico                |
| <b>ICAM</b>            | Integrated Coastal Area Management                                                      |
| <b>ICAM-LAC</b>        | Integrated Coastal Area Management for Latin America and the Caribbean                  |
| <b>ICES</b>            | International Council for the Exploration of the Sea                                    |
| <b>ICES-IOC/WGBOSV</b> | Working Group on Ballast and other Ship Vectors (ICES-IOC)                              |
| <b>ICES-IOC/WGHABD</b> | Working Group on Harmful Algal Bloom Dynamics (ICES-IOC)                                |
| <b>ICM</b>             | Integrated Coastal Management                                                           |
| <b>ICSU</b>            | International Council for Science                                                       |
| <b>I-GOOS</b>          | Intergovernmental Committee for GOOS                                                    |
| <b>IMO</b>             | International Maritime Organization                                                     |
| <b>IOC</b>             | Intergovernmental Oceanographic Commission (UNESCO)                                     |
| <b>IOCARIBE</b>        | IOC Sub-Commission for the Caribbean and Adjacent Regions                               |
| <b>IOCARIBE-GOOS</b>   | Global Ocean Observing System for the IOCARIBE Region                                   |
| <b>IODE</b>            | Oceanographic Data and Information Exchange                                             |
| <b>IPHAB</b>           | Intergovernmental Panel on Harmful Algal Blooms                                         |
| <b>IWCAM</b>           | Integrating Watershed and Coastal Area Management                                       |
| <b>JCOMM</b>           | Joint Technical Commission for Oceanography and Marine Meteorology                      |
| <b>LBS</b>             | Protocol for the Protection of the Marine Environment from Land- Base Sources           |
| <b>LME</b>             | Large Marine Ecosystems                                                                 |
| <b>MGA</b>             | Marine Geophysical Action                                                               |
| <b>MIM</b>             | Marine Information Management                                                           |
| <b>MOU</b>             | Memorandum of Understanding                                                             |
| <b>NEPA</b>            | National Environmental Policy Act                                                       |
| <b>NGDC</b>            | National Geophysical Data Centre                                                        |
| <b>NGOs</b>            | Non-Governmental Organizations                                                          |
| <b>NOAA</b>            | National Oceanic and Atmospheric Administration (US)                                    |
| <b>NODC</b>            | National Oceanographic Data Centre                                                      |
| <b>NOWPAP</b>          | Northwest Pacific Action Plan                                                           |
| <b>ODINCARSA</b>       | Ocean Data and Information Network for the IOCARIBE for the Caribbean and South America |

|                     |                                                                    |
|---------------------|--------------------------------------------------------------------|
| <b>OECS</b>         | Organization of Eastern Caribbean States of Mexico                 |
| <b>OSPESCA</b>      | Central America Fisheries and Aquaculture Organization             |
| <b>PAG</b>          | Project Advisory Group                                             |
| <b>PEMSEA</b>       | Partnerships in Environmental Management for the Seas of East Asia |
| <b>PICES</b>        | North Pacific Marine Science Organization                          |
| <b>RPC</b>          | Regional Project Coordinator                                       |
| <b>RSMAS</b>        | Rosenstiel school of Marine and Atmospheric Science                |
| <b>SCOR</b>         | Scientific Committee on Oceanic Research                           |
| <b>SHOM</b>         | Services Hydrographique et Océanographique de la Marine (France)   |
| <b>SIDS</b>         | Small Islands Development States                                   |
| <b>SMS</b>          | Synchronous Meteorological Satellite                               |
| <b>SOP</b>          | Standard Operative Procedure                                       |
| <b>SPINCAN</b>      | Integrated Service Platforms and Information Network for Ocean     |
| <b>TDA</b>          | Transboundary Diagnostic Analysis                                  |
| <b>UNCSD</b>        | United Nations Conference on Sustainable Development               |
| <b>UNEP</b>         | United Nations Environment Programme                               |
| <b>UNEP/CAR/RCU</b> | United Nations Environment Programme Regional Coordinating Unit    |
| <b>UNESCO</b>       | United Nations Educational, Scientific and Cultural Organization   |
| <b>UNGA</b>         | United Nations General Assembly                                    |
| <b>UNIDO</b>        | United Nations Industrial Development Organization                 |
| <b>UNOPS</b>        | United Nations Office for Project and Services                     |
| <b>UWI</b>          | University of West Indies                                          |
| <b>WESTPAC</b>      | IOC Sub-commission for the Western Pacific                         |
| <b>WMO</b>          | World Meteorological Organization                                  |
| <b>WSSD</b>         | World Summit on Sustainable Development                            |
| <b>WW2BW</b>        | White Water to Blue Water Initiative                               |
| <b>WWII</b>         | World War II                                                       |

| 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     |

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| 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*       |



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| 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 |
| 142. | Third Session of the Joint WMO-IOC Technical Commission for Oceanography and Marine Meteorology, Marrakesh, Morocco, 4–11 November 2009                                                                                                                                                | E, F, R, S |
| 143. | Ninth Session of the IOC Intergovernmental Panel on Harmful Algal Blooms, Paris, France, 22–24 April 2009 (* Executive Summary available separately in E, F, S & R)                                                                                                                    | E*         |
| 144. | Fifth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Managua, Nicaragua, 15–17 March 2010 (* Executive Summary available in E, F, S & R)                                     | E*         |
| 145. | Sixth Session of the IOC Regional Committee for the Central and Eastern Atlantic Ocean, Accra, Ghana, 28–30 March 2010 (* Executive Summary available in E, F, S & R)                                                                                                                  | E*         |
| 146. | Forty-second Session of the Executive Council; Paris, 15, 19 & 20 June 2009                                                                                                                                                                                                            | E, F, R, S |
| 147. | Forty-third Session of the Executive Council; Paris, 8–16 June 2010                                                                                                                                                                                                                    | E, F, R, S |
| 148. | Sixth Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Istanbul, Turkey, 11–13 November 2009 (* Executive Summary available separately in Ar, E, F, S & R) | E*         |
| 149. | Seventh Session of the Intergovernmental Coordination Group for the Tsunami Early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas, Paris, France, 23–25 November 2010 (* Executive Summary available separately in Ar, E, F, S & R)  | E*         |
| 150. | Sixth Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Santo Domingo, Dominican Republic, 26–29 April 2011 (* Executive Summary available in E, F, S & R)                      | E*         |

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| 151. | Twenty-fourth Session of the Intergovernmental Coordination Group for the Pacific Tsunami Warning and Mitigation System, Beijing, China, 24–27 May 2011 (*Executive Summary in E, F, S & R included)                                               | E*    |
| 152. | Twenty-first Session of the IOC Committee on International Oceanographic Data and Information Exchange, Liège, Belgium, 23–26 March 2011 (*Executive Summary available separately in E, F, S & R)                                                  | E*    |
| 153. | Eighth Session of the IOC Sub-Commission for the Western Pacific (WESTPAC-VIII), Bali, Indonesia, 10–13 May 2010 (*Executive Summary available separately in E, F, S & R)                                                                          | E*    |
| 154. | Tenth IOC Intergovernmental Panel on Harmful Algal Blooms, Paris, France, 12–14 April 2011 (* Executive Summary available separately in E, F, S & R)                                                                                               | E*    |
| 155. | Forty-fifth Session of the Executive Council, Paris, 26–28 June 2012 (* Decisions available in E, F, S & R)                                                                                                                                        | E*    |
| 156. | Seventh Session of the Intergovernmental Coordination Group for the Tsunami and other Coastal Hazards Warning System for the Caribbean Sea and Adjacent Regions, Willemstad, Curacao, 2–4 April 2012 (*Executive Summary available in E, F, S & R) | E*    |
| 157. | Eleventh Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), Miami, USA, 17–20 May 2011 (*Executive Summary available separately in E & S)                                                                        | E, S* |