

Intergovernmental Oceanographic Commission
Reports of Governing and Major Subsidiary Bodies



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

Eighth Session
Recife, Brazil
14–17 April 2004

UNESCO

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Caribbean and Adjacent Regions
(IOCARIBE)**

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* The Recommendations (Annex II of this report) are available in French, Spanish and Russian as document IOC/SC-IOCARIBE-VIII/3s (<http://unesdoc.unesco.org/ulis/cgi-bin/ulis.pl?database=ged&req=2&look=all&no=135224>)

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1. OPENING

1 The Eighth Intergovernmental Session of the IOC-Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) took place in April 2004, two years after the previous IOCARIBE Session held in Mexico in February 2002, when Brazil's motion to host this Session was accepted by participating delegates and the Intergovernmental Oceanographic Commission (IOC) of the United Nations Educational, Scientific and Cultural Organization (UNESCO).

2 Dr Manoel Barral Netto, representing Dr Erney Camargo, President of the Scientific and Technologic Development National Committee (CNPQ), opened the session at 09:00 on Wednesday 14 April 2004, at the Atlante Plaza Hotel, in Recife, Pernambuco, Brazil. He welcomed the participants to the city of Recife.

3 The IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE) Chairman, Mr Marco Polo Bernal-Yarahuan addressed the Session and thanked the Government of Brazil and its Local Organizing Committee for the hospitality and excellent facilities provided for the meeting. In his speech he explained the main scope intended for the Session and its future expectations. He encouraged Member States to continue making necessary efforts to consolidate IOCARIBE.

4 Prof. Mario Ruivo, IOC Vice-Chairman responded in his capacity of Vice-Chairman of IOC and on behalf of Dr Patricio Bernal, IOC Executive Secretary and UNESCO Assistant Director-General. He recalled his long association with IOCARIBE and expressed appreciation for the hosting of the Secretariat of the Sub-Commission in Cartagena with the Agreement signed in 26 February 1988 in which he was involved, at that time, on behalf of IOC and UNESCO.

5 Prof. Mario Ruivo noted the considerable progress achieved by the Sub-Commission, which is an indicator of the efforts undertaken by Member States and the Secretariat to implement the agreed programme of work, despite some difficulties.

6 In his address he recalled that mankind is now engaging in total exploration and occupation of the ocean space and mobilizing science and technology to achieve sustainable development of marine resources and environment to the benefit of humanity and the necessary conservation of nature. Within this process, the role of the regional subsidiary bodies of IOC is expected to increase.

7 Mr Cylon Eudóxio Gonçalves da Silva, Secretary for Policy, and Research and Development addressed the Session on behalf of Mr Eduardo Campos, Minister of Science and Technology. He welcomed the participants and delegates from Member States, countries and regional organizations to the Eighth Intergovernmental Session of IOCARIBE. He stated that he was honoured to host the Session and wished all a successful meeting. In his speech he highlighted the importance of oceanographic research despite lack of resources. Although successful academic scientific research has been achieved, a lot more needs to be accomplished.

2. ADMINISTRATIVE ARRANGEMENTS

2.1 ADOPTION OF THE AGENDA

8 The Provisional Agenda was submitted to delegates for their approval. The IOCARIBE Chairman proposed to include an additional theme for discussion: "Marine Environmental

Capacity Development in Latin America and the Caribbean”. **The Sub-Commission unanimously adopted** the motion.

9 **The Sub-Commission adopted** with some corrections the Agenda for the Session as in [Annex I](#).

2.2 DESIGNATION OF RAPPORTEUR FOR THE SESSION

10 **The Sub-Commission designated** Mrs Carmen Arroio from the Brazilian Delegation as Spanish Rapporteur and Ms Essie Duffie from the US Delegation as English Rapporteur for the Session.

2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION

11 The IOC Secretary for IOCARIBE, Mr Cesar Toro, introduced the documentation to the meeting and invited the Session to adopt the Provisional Timetable (Doc. IOC/SC-IOCARIBE-VIII/1 Add. Prov.) taking into account: (i) any 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.

12 He mentioned that the Session would work in plenary as far as possible. However, where deemed necessary, ad-hoc sessional working groups might be formed to constitute open-ended working groups.

13 These working groups may be formed to deal with specific questions arising from particular agenda items. Their work shall serve as the basis for and facilitate the debate in plenary. They shall meet after the plenary session.

14 **The Sub-Commission approved** the proposed Provisional Timetable (Doc. IOC/SC-IOCARIBE-VIII/1. Add. Prov) and the Provisional List of Documents (Doc. IOC/SC-IOCARIBE-VIII/4 Prov.) with some modifications.

15 The List of Documents is given in [Annex IV](#), the List of Participants in [Annex III](#) and the List of Acronyms in [Annex VI](#).

3. REPORT OF THE IOCARIBE SECRETARY ON INTERSESSIONAL ACTIVITIES

3.1 PROGRESS REPORT ON PROGRAMMES AND BUDGET

16 The IOC Secretary for IOCARIBE presented the document “Report by the IOCARIBE Secretary on Programme Implementation” (Doc. IOC/SC-IOCARIBE-VIII/2 Annex 1). He delivered his statement on developments in the work of the Sub-Commission, since the Seventh Session of IOCARIBE (Veracruz, Mexico, February 2002) and perspectives for the coming years.

17 In his report Mr Toro referred to the level of implementation of the Recommendations approved during the last Session of the Sub-Commission, as follows:

Recommendation SC-IOCARIBE-VII.1 “Work of the IOCARIBE-GOOS Ad-Hoc Advisory Group and the Strategic Plan for the Development of an Ocean Observing System for the IOCARIBE Region.”

18 *The Case for IOCARIBE-GOOS —a Strategic Plan* was published in October 2002 (GOOS Report No 115; IOC/INF-1170).

19 An IAS RODAE IOCARIBE-GOOS Modelling Workshop was held in Barbados, from 6 to 8 November 2002.

20 In March 2003, The IOCARIBE-GOOS Steering Committee was established with Members from Barbados, Belize, Bermuda, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, France, Mexico, Panama, Trinidad & Tobago, United Kingdom, United States of America and Venezuela. Members of the Steering Committee are from ocean organizations and meteorological agencies, fisheries, environmental agencies and from the private sector. The group worked under the chairmanship of Guillermo Garcia, Cuba, and Doug Wilson, USA

21 The First Meeting of the IOCARIBE-GOOS Steering Committee was held in New Orleans, USA at the Hilton Garden Inn, on 2 and 3 June 2003.

22 A web site was established at www.iocaribegoos.org and is available to the GOOS and scientific community. Besides general ocean information, results, workshop and meeting reports, the visitor find the presentations made at the IOCARIBE-GOOS Conferences in 2001 in Miami and 2003 in New Orleans.

23 The Steering Committee will create scientific and technical working groups as appropriate, drawing on members of the Steering Committee and outside experts as necessary.

24 Thirty invited participants met at the University of the Virgin Islands in St. Thomas, USVI, from 2 to 4 February 2004, to plan a Caribbean Sea —Gulf of Mexico pilot programme in support of IOCARIBE-GOOS implementation. The workshop was funded by NOAA Research through a grant from the US State Department OES and by IOCARIBE. The group consisted of representatives from regional academic and research institutions, government agencies, intergovernmental bodies, and commercial organizations, from ten different countries and territories. The meeting was called to address the IOCARIBE-GOOS implementation plan through “...*implementation of concept-demonstration projects that (i) demonstrate the utility and cost-effectiveness of the GOOS end-to-end, user-driven approach and (ii) contribute to the development of the regional network and local GOOS implementation.*” (IOCARIBE-GOOS Strategic Plan, I-GSP). The project combines aspects of two recommended Concept-Development Projects (CDPs) from the I-GSP; the potential contributions to the initial observing system and the core elements of the observing system have been identified. Among them:

- Sea Level: The US operates tide gauges in the US and territories; <http://www.cops.nos.noaa.gov>, the Caribbean Planning for Adaptation to Climate Change (CPACC) programme, funded by GEF; www.cpacc.org. RONMAC, funded by NOAA, USAID, OAS; <http://www.oas.org/ronmac>, GLOSS reporting stations in the Bahamas, Colombia, Cuba, Martinique, Jamaica, Mexico, Panama, Bermuda, Venezuela.
- Time Series: CATS, University of Puerto Rico, CARIACO Edimar, Venezuela and University of South, Florida, USA. Coral Reef Monitoring, CARICOMP, GCRMN.
- Voluntary Observing Ships: US, SeaKeepers, Cuban Met Office Programme.

- Buoys: US National Data Buoy Centre, Météo-France.
- Meteorological Stations: Cable Transports- Florida Straits, Grenada Passage.
- Regional and National Observing Systems: Satellite Remote Sensing Centres in USA, Mexico, Colombia, and Venezuela; World Bank (GEF Programmes such as Caribbean LME, MBRS, ‘Wider Caribbean Connectivity’)

25 As well, such projects as Global Ocean Data Assimilation Experiment (GODAE) could serve as a potential contribution to the pilot IOCARIBE-GOOS demonstration projects. Within GODAE a series of assimilative models of the Atlantic and Caribbean was run by USA, United Kingdom, France and Canada. Other projects such as PIRATA (Tropical Atlantic buoy network) were supported by Brazil, France and USA.

26 IOCARIBE-GOOS has been progressing steadily and is one of the best-structured programmes in the region. However, there is a long road ahead and a series of impediments to its progress have been identified: insufficient capacity in marine and coastal science and services in most Member States; lack of confidence on the usefulness of the system as a tool for sustainable environmental and economic development; severe budget limitations due to economic crises in most countries; lack of commitment by larger States to initial organization; lack of political will; and no operational marine agencies.

27 Two major lessons were learned: regional growth needs committed ‘champions’ of GOOS throughout the region; resources are needed to educate significant individuals to the operations and benefits of GOOS, and progress would be hastened by the availability of dedicated secretariat for IOCARIBE-GOOS. Well-intentioned as they may be, volunteers cannot commit necessary resources to organisational tasks such as communications and fund-raising.

28 Two potentially significant developments occurred last year. IOCARIBE-GOOS is developing an MOU with the International SeaKeepers Society to make SeaKeepers observing systems an integral part of the IOCARIBE-GOOS Initial Observing System. SeaKeepers has numerous private shipboard observing systems in the region, is also committed to installing fixed observing platforms, and has a developing educational component.

29 At the White Water to Blue Water Initiative (WW2BW) Conference in Miami (22–26 March 2004) over 100 partnerships were developed during the week, and many other potential ones identified. They ranged in scale from very local to regional and from highly research-oriented to applications. Many of these partnerships have the potential to contribute greatly to the goal of IOCARIBE-GOOS. These will be further explored and developed as IOCARIBE-GOOS partners may participate directly in its activities or might contribute to the financing of the programme.

Recommendation SC-IOCARIBE-VII.2 “Tsunami Warning System for the Caribbean.”

30 The Tsunami Warning System for the Caribbean Project Proposal was initially approved by the IOC Assembly in 1999 and later by the IOC Executive Council in 2003. The project is available at http://my.fit.edu/~gmaul/tsunami_proposal.pdf.

31 IOCARIBE Secretariat has been searching for international funding agencies support. However, efforts for funding the Tsunami Warning System have been unsuccessful.

32 Members of the IOCARIBE Tsunami Group of Experts (TSGE) have met with the Intergovernmental Coordination Group for the Tsunami Warning System in the Pacific

(ICG/PTWS, formerly ITSU) several times since the last IOCARIBE Sub-Commission Session, gave oral reports and published abstracts. Other scientific and technical papers have been published in the open literature. A widely read editorial was published in *Sea Technology magazine* in 2003, entitled “Atlantic Tsunami Warnings Are Needed”.

33 A parallel effort in Puerto Rico (PR) and the Virgin Islands (VI) is developing a sub-regional PR-VI TWS that serves as a model for the IAS TWS. Two seminal workshops were held (Mayaguez, 2003 and San Juan, 2004). The former workshop established the protocol for the PR-VI TWS; the latter was an NSF Caribbean Tsunami Workshop of extraordinary scientific and technological focus.

34 As well, a recent proposal for funding was delivered from Venezuela to IOC/UNESCO by Venezuela Ministry of Science and Technology for assessing the potential impact of tsunamis on the Coasts of Venezuela (“Tsunami Impact on the Venezuela Coast”). Geographic Institute of Venezuela jointly with Centro de Investigación Científica y de Educación Superior de Ensenada (CICESE, Mexico) and the University of West Indies (UWI) Trinidad & Tobago Campus should carry out the project.

35 After evaluating the progress of this project and considering the limited availability of funds for this project, the IOCARIBE Board of Officers recommended that its priorities should be changed. Focus should be placed now on increasing awareness and public education for impact mitigation and encouraged other IOCARIBE programmes and projects to cooperate with this project.

Recommendation SC-IOCARIBE-VII.3 “Scientific Research Cruises”

36 The 35th IOC Executive Council (2002) endorsed the Recommendations of IOCARIBE VII by adopting Resolution XXXV-5. However, concerning the Recommendation SC-IOCARIBE-VII.3 consensus was not reached. Some Delegations expressed concerns about the wording. In the Board of Officers Meeting (31 Oct.-1 Nov. 2002-Ref. C-IOCARIBE/OFFICERS 2002-01) it was concluded that a new drafting would be more appropriated.

Recommendation SC-IOCARIBE-VII.4 “Pacific Central American Large Marine Ecosystem Project.”

37 During the 6th Consultative Committee Meeting of the Large Marine Ecosystem (LME) Programme (Paris, March 2004), the United Nations Environment Programme (UNEP), the United Nations Industrial Development Organization (UNIDO) and IOCARIBE agreed to implement a new Concept Paper given the new specifications by GEF within a 3-month period and will merge initiatives into one inclusive project.

38 Financing will be sought for a workshop of international experts/organizations and participating countries’ experts, including Mexico that offered hosting the meeting.

39 The new PDF B should consider a 2-year period to fully develop the definitive project. UNEP/UNIDO will collaborate in the implementation/execution of the project; IOCARIBE will contribute to the scientific and technical aspects of the project.

40 Member States are asked to formally designate scientific Focal Points to the project. El Salvador and Ecuador also should be invited to participate.

Recommendation SC-IOCARIBE-VII.5 “Regional Project Co-ordinators and Steering Groups of Experts.”

41 As it was recommended, and reaffirming the importance of group of experts as the core for reaching IOC and IOCARIBE goals, all the projects and programmes are established with highly qualified experts groups, each of them led by a Project Co-ordinator with support from his/her Institution.

42 Each Regional Project Co-ordinator has assumed his/her duty of project management. The experience shows that the mandate of a Co-ordinator or Group of Experts should last as necessary for executing the agreed task independently of the periodicity of the IOCARIBE Sessions.

43 The experience also shows that progress would be improved by the availability of dedicated secretariat for project implementation. There is a clear need for a strategy to provide the group of experts and project co-ordinators with financial support. IOC and IOCARIBE should work out the necessary commitment from Member States for placing investments in the region projects ensuring resources to organizational tasks such as communications.

Recommendation SC-IOCARIBE-VII.6 “Caribbean Process.”

44 Regarding the "Caribbean Process" for the development and protection of the coastal and marine environment of the Caribbean Region, special attention was directed to the proper identification of needs for the Caribbean region. IOC and IOCARIBE participated in the launching of The White Water to Blue Water Initiative (WW2BW) with the National Oceanic and Atmospheric Administration (NOAA, USA) as the leading agency. The IOCARIBE Secretary was part of the Steering Committee, which organized the Wider Caribbean Region Stakeholders Conference held on 22–26 March 2004 in Miami, Florida.

45 In order to establish effective liaisons for implementing the “Caribbean Process” IOCARIBE has initiated contacts with UNEP and the Caribbean Community (CARICOM) and the co-operation is on going.

46 Concerning the issues pertaining to promoting an integrated management approach to the Caribbean Sea in the context of sustainable development, IOCARIBE Board of Officers planned two missions to the Member States of the region, firstly starting with the CARICOM Countries and a second, to the Spanish speaking Countries. One of the mission’s major goals is to use the mission for assessing *in situ* the potential of the region and its capacity for carrying out the programmes and projects. The institutions and human resources potential, drawbacks and strengths should be identified and assessed as well. (Ref. Recommendation SC-IOCARIBE-VII.8).

Recommendation SC-IOCARIBE-VII.7 “World Summit on Sustainable Development (WSSD).”

47 The IOCARIBE Sub-Commission was represented in the World Summit on Sustainable Development (Johannesburg, South Africa, 26 August–4 September 2002) by its Secretary Mr Cesar Toro and by one of its Vice-Chairpersons, Mr Bradford Brown (USA). The main objective of the mission was to promote the Caribbean region and the new vision of the Sub-Commission.

48 During the Summit special attention was given to the Caribbean Region and the IOCARIBE LME Programme and IOCARIBE-GOOS.

Recommendation SC-IOCARIBE-VII.8 “Future Evaluation and Follow-up of an Integrated Inventory for Professional Capacity Building in Regional Projects.”

49 The IOCARIBE is working towards an enhanced IOC presence in the Caribbean region through developing greater interest and involvement of Member States in the operational programmes and projects of the Sub-Commission.

50 In order to fulfil this recommendation, IOCARIBE Board of Officers planned two missions to the Member States of the region, firstly starting with the CARICOM Countries and a second, to the Spanish speaking Countries. One of the missions’ major goals is to use the mission for assessing *in situ* the potential of the region and its capacity for carrying out the programmes and projects. The institutions and human resources potential, drawbacks and strengths.

51 The first mission From 13 to 20 of March 2004 led UNESCO Assistant Director-General/IOC Executive Secretary, Dr Patricio Bernal, Vice-Chairman Mr Bradford Brown and the IOC Secretary for IOCARIBE-UNESCO Mr Cesar Toro to CARICOM Member States. Discussions were held with government Ministers and Heads of relevant marine related institutions and the CARICOM Secretariat to further develop and enhance the IOC presence in the Caribbean by increasing active participation of the CARICOM Caribbean countries in the activities of the Commission and its Sub-Commission.

52 The countries visited were Barbados, Guyana, Jamaica and Trinidad & Tobago. The mission held exploratory talks aimed to establish a framework within which IOC and IOCARIBE might assist in developing the “minimum critical mass”, a capacity building strategy and promoting an integrated management approach to the Caribbean Sea area in the context of sustainable development. The possibility of establishing a Memorandum of Co-operation with CARICOM in this regard will also be explored.

53 The major areas identified in which IOC and IOCARIBE might assist this sub-region are, namely,

- Climate Change and Variability
- Fisheries and Ecosystems Management
- Operational Oceanography
- Integrated Coastal Area Management

54 Other areas include ocean data management, and preparedness to climate variability and global change in Small Islands States, Caribbean Regions.

55 The IOC Secretary for IOCARIBE informed that the second IOCARIBE mission is scheduled for the first week of May 2004, the IOCARIBE Chairman, Mr Marco-Polo Bernal, and the Vice-Chairman Mr Guillermo Garcia will lead it. The list of countries to be visited is to be decided.

56 As reported by IOCARIBE Projects co-ordinators, all projects included tailored capacity building plans. Such plans are at different stages of development.

57 In order to update and inform the Member States, IOCARIBE Secretariat re-designed the IOCARIBE Web Site, which includes the possibility for updating the information with new developments reported directly by Member States.

58 Since the beginning of 2004, IOC and IOCARIBE are developing a Capacity Building Strategy to ensure the best use of resources and the region interests. Such a capacity should include the establishment of necessary plan and mechanisms, including the selection of proper indicators, to ensure specific and systematic evaluation, and periodic independent oversight in the long term for all programmes and projects as far as training, education and mutual assistance activities are concerned.

59 One of the main recommendations issued from the first mission to CARICOM countries was the need to prepare a visit of the IOC newly appointed TEMA officer to the institutions of the region. That visit should enhance the IOC/IOCARIBE vision of capacity building strengths and needs of the countries of the region.

60 The IOC Secretary for IOCARIBE Mr Cesar Toro further reported on the budgetary situation of the Sub-Commission and introduced the need to explore additional funding for scientific programmes.

61 He informed the Session that a total amount for office running costs has been decreasing and only USD 15.000 were received from IOC Regular Programme in 2002 and a similar amount in 2003. Additional difficulties appeared in 2003 due to the host country delay in providing its financial support for covering local staff wages. To cope with this situation a loan of USD 22.000 was provided from savings and extra-budgetary sources support.

62 In relation to projects, during 2001–2003 a total of three hundred eighty six thousand three hundred and eighty six US Dollars (USD 386.386,00) were received. This amount was distributed as follows: 17% for the year 2001, 30% for the year 2002 and the remaining 53% for the year 2003. From the total allocated, 56% was received from support from Member States and the remaining 44% from the IOC Regular Programme. Regarding the investment sources, Member States (EXB) and other funding sources such as the cooperation agencies and the Global Environmental Facility (GEF) have invested 56% of the total against 44% percent received from the Regular Budget of the IOC (RB). The trend in project investment shows an increase of almost the double per year.

63 Mexico applauded the efforts made by the IOCARIBE Secretariat in preparing the report and congratulated the Secretary for the outstanding work achieved during this intersessional period. The Delegate also thanked Colombia for the continuous support given to the Regional Secretariat.

64 Venezuela referred to the Tsunami programme and agreed that it should focus on strengthening mitigation efforts, warning and mapping development.

65 Cuba thanked the IOC Secretary for IOCARIBE for the report and the promising future for the Sub-Commission. The Delegate referred specifically to the budget execution. He regretted the lack of resources for the Sub-Commission from the Regular Budget.

66 He recommended an increase of the IOC financial support provided for the IOCARIBE Secretariat in order to ensure continuity of its work.

67 Barbados thanked the Government of Brazil for hosting the meeting and Colombia for the support provided to the Secretariat since its inception. The Delegate stressed that in order to promote a greater participation of Member States on the intergovernmental sessions and programmes of the Sub-Commission a strategy should be developed.

68 The USA supported comments made by Cuba and Barbados. The Delegate thanked the IOCARIBE Secretary and congratulated him for the outstanding job and the excellent report presented. He looked forward to a more infusion of resources from IOC in reference to LME and other projects.

69 The IOC Vice-Chairman Mr Mario Ruivo mentioned that the future of IOC and its new vision regarding international cooperation would greatly depend on the level of involvement of Member States. In such a context, emphasis should continue to be placed, at this stage, on the promotion of the Large Marine Ecosystem (LME) and the Global Ocean Observing System (GOOS). He emphasized the need to ensure a solid Technical Secretariat, in order to achieve these goals. He restated that one goal of this Session should be to encourage decision makers in the Member States to secure funding from GEF. A second goal should be to promote and facilitate more active participation of Member States.

70 Mr Cylon Eudóximo Gonçalves da Silva, Secretary for Policy, Research and Development Programmes of the Brazilian Ministry of Science and Technology thanked the IOC Secretary for IOCARIBE for the excellent presentation of the report and the Secretariat for the outstanding work achieved. He also stressed the need of establishing a mechanism for all Member States to participate in inter-governmental sessions.

71 Ms Maria Cordelia Soares Machado, on behalf of Mr Da Silva (Brazil) expressed satisfaction of IOCARIBE being in Brazil and participating in IOCARIBE and acknowledged the work done by Mr Cesar Toro and Mr Marco Polo Bernal.

72 Colombia congratulated Mr Toro for the successful work carried out particularly considering the limited availability of resources and reiterated the commitment of the Government of Colombia to continue its support to the IOCARIBE Sub-Commission. He also emphasized that it is expected that the funds due will be transfer shortly.

73 **The Sub-Commission endorsed** the Report by the IOC Secretary for IOCARIBE on Programme Implementation.

4. POLICY ISSUES

4.1 IOCARIBE STRATEGIC SCIENCE PLAN AND RELATED SERVICES FOR 2001–2010

74 The IOC Secretary for IOCARIBE introduced this agenda item. The Framework is the result of the implementation of Recommendation SC-IOCARIBE-VI.10 "Evaluation and Upgrading of the Scientific Research and Training Component in Regional Projects" of the Sixth Intergovernmental Session of the IOCARIBE Sub-Commission (San Jose, Costa Rica, 26–29 April 1999). It takes into consideration the priorities and capacities of Member States of the Sub-Commission and should be capable of identifying regional requirements on scientific research and ocean services. The strategy aims at projecting a new vision and a new profile for the Sub-Commission and includes four main issues:

1. Oceans and Climate
2. Science and Ecosystems
3. Ocean Science for Integrated Management
4. Extreme and Dangerous Natural Events

75 Cuba proposed that a consultant should prepare the final version of the Strategic Science Plan. He highlighted the importance of this document because it should allow the possibility of obtaining additional funding sources for programmes. He stressed that the final version of the Plan has to be ready before the end of the present biennium. He also suggested that the Secretariat should prepare a draft recommendation to be distributed among Member States as a mechanism for approving the document without having to convene a specific meeting for that purpose.

76 Prof. Mario Ruivo, IOC Vice-Chairman, referred to the contents of the Plan. He mentioned that the plan was too abstract, and stressed the need to improve its science perspective and vision for scientists and contributors.

77 Cuba agreed with Prof. Ruivo's comments and reiterated that the document was too general. A more concrete plan of activities must to be defined within it.

78 The USA highlighted the importance of having a Strategic Plan and the necessity of its being broad enough to cover regional needs. The Delegate reiterated the need for a consultant to produce a working document utilizing the reports of the working groups.

79 Colombia commented that the plan needs careful evaluation. The Delegate suggested that the information contained within the Plan should be classified by topic.

80 The UNEP Representative supported the creation of a group to seek additional funding to support the plan. He recommended moving in two directions: (i) contacting Governments and (ii) forming alliances with other organizations to alleviate scarcity of resources.

81 The IOC Vice-Chairman agreed with the general comments made regarding the plan and suggested that a small group be set up to draft the Recommendations.

82 **The Sub-Commission requested** the Secretariat to submit the final draft of the IOCARIBE Strategic Science Plan for approval by the IOCARIBE Board of Officers at its regular meeting before the end of 2004.

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

4.2 PROGRAMMED ACTIVITIES FOR 2004–2005

84 The IOC Secretary for IOCARIBE introduced this agenda item. A plan of activities including financial implications was reported, responding to the new challenges of the Sub-Commission. **The Sub-Commission reviewed** in detail each project of the plan after listening to individual report by Project Coordinators.

85 **The Sub-Commission provided** guidance on proposed activities to be carried out by the Sub-Commission during 2004 and 2005 **and urged** Member States to support its activities.

5. REGIONAL PROJECTS

86 The IOC Secretary for IOCARIBE presented a general overview on the state of implementation of the IOCARIBE Regional projects. He informed the Session that every project should be presented by its Regional Project Coordinator (RPC) including implemented activities, main objectives and possible funding sources for the short and long term.

5.1 OCEAN SCIENCES SECTION

5.1.1 Caribbean Large Marine Ecosystem (CLME)

87 Mr Robin Mahon, Caribbean Large Marine Ecosystem (CLME) Regional Project Coordinator (RPC), introduced this Agenda item to the Session.

88 He referred to the overall objective, which is the sustainable management of the shared living marine resources of the Caribbean and adjacent areas through an integrated management approach that will meet the World Summit on Sustainable Development, Johannesburg 2002 (WSSD) target for sustainable fisheries.

89 He was pleased to report to the IOC/SC-IOCARIBE-VIII Session that the Concept had been accepted into the GEF pipeline in May 2003, and that the proposal for PDF Block B funds had been accepted by UNDP and should shortly be circulated to countries for endorsement.

90 Within the project, there will be the opportunity for implementation of management reforms that will permit sustainable management of the shared living marine resources of the Caribbean Large Marine Ecosystem and adjacent regions. Since most living marine resources are shared in some way, these reforms can be expected to lead to improved food security and enhanced livelihoods in rural coastal communities that rely on fisheries and tourism. There is also the possibility of preservation and rehabilitation of degraded coastal ecosystems, conserving and protecting marine biodiversity.

91 The project is expected to begin in 2004 and be completed by October 2005. The GEF project will be presented to GEF Council in Fall 2005. Mr Mahon emphasized the important role that IOCARIBE focal points could play in promoting national endorsement of the proposal.

92 The Representative of the Caribbean Regional Fisheries Mechanism (CRFM), Mr Terrence Phillips, suggested that project implementation could be done within the context of a regional institutional network, noting that the project should complement other projects which include knowledge sharing, institutional reform and resource management at the sub-regional, regional and extra-regional levels.

93 The USA thanked Mr Mahon for his presentation and pointed out the need to make a recommendation to encourage Member States to finalize the signatory process before the proposed July 2004 deadline.

94 The IOC Secretary for IOCARIBE stressed that executing such a large project would raise the profile of the Sub-Commission, and mentioned the need to identify sources of co-financing to ensure success.

95 **The Sub-Commission acknowledged** with satisfaction the progress made in this project **and urged** Member States to fully support the signatory process.

96 **The Sub-Commission approved** [Recommendation SC-IOCARIBE-VIII.2](#).

5.1.2 Pacific Central American Large Marine Ecosystem Project (PCA-LME)

97 Mr Bradford Brown, IOCARIBE Vice-Chairman, introduced this item. In his presentation he elaborated on the main issues of the progress report prepared by Mr Daniel Lluch, Regional Project Coordinator for the Pacific Central American Large Marine Ecosystem Project (PCA-LME) who was unable to attend the Session.

98 The main objective of the project is the monitoring and assessment of the Pacific Coast of Central American LME and its resources. He informed the Session that the involved United Nations Agencies have met and reached agreement on a way forward. IOCARIBE, UNEP, and UNIDO will develop a concept paper to submit to UNDP-GEF. Financing will be sought for a workshop of international experts/organizations and participating countries. (Mexico has offered to host the meeting). UNEP, UNIDO and IOCARIBE have agreed to implement the concept paper considering the new specifications given by GEF. UNEP and UNIDO will collaborate on the implementation and execution of the project while IOCARIBE will contribute to the scientific and technical roles. IOC will contact El Salvador and Ecuador to establish focal points for the project. The new PDF B proposal should consider a two-year period to develop the full project.

99 The PCA-LME Project is back on track, moving forward and is expected to have a revised proposal within the next 12 months. All Pacific Central American countries within this LME need to be involved. To this end, a planning meeting of experts will be organized shortly.

100 Regarding the Gulf of Mexico LME, Mr Brown informed the meeting that the Gulf of Mexico LME is in the GEF Pipeline for a PDF-B grant. UNIDO will be the executing agency and UNDP the implementing agency and should work in the signatory process.

101 Mr Brown reiterated that IOC has promoted scientific coordination of LME around the world and sponsors a regular meeting of LME representatives for this purpose. In the IOCARIBE and adjacent areas region there are three LME projects in preparation. He highlighted that there is specific value in our region in integrating efforts to optimise operations and information exchanges between the Caribbean, Gulf of Mexico and Pacific Central America LME Projects.

102 The Representative of UNEP recalled that the project has been able to secure funding from GEF, but an active participation of countries is crucial and very important.

103 **The Sub-Commission acknowledged** the work done in the PCA-LME project **and urged** Member States to establish a Focal Point for supporting it.

104 **The Sub-Commission requested** the Sub-Commission to actively pursue IOC's LME scientific oversight and play a coordination role for the LME project in its region.

5.1.3 Harmful Algal Blooms (HAB-ANCA)

105 Mr Ernesto Mancera, Harmful Algal Blooms (HAB-ANCA) Regional Project Coordinator (RPC), introduced this item to the Session.

106 He reported about the Third Session of the ANCA IOCARIBE-HAB-III Working Group which was held at the Instituto Nacional de Investigaciones Agrícolas (INIA) in Cumaná, Venezuela from 16 to 18 July 2003. Representatives of Colombia, Costa Rica, Cuba, Mexico, El Salvador, Guatemala and Venezuela attended the Meeting. He mentioned that the work of the Group was reinforced and a review of main events occurred in the region was presented by each participating country. The Group elected a new Steering Committee as follows: Chairman: Ernesto Mancera (Colombia), Vice-Chairman: Hector Leonel Carrillo (Guatemala) and Secretary: Maribel Vargas (Costa Rica).

107 During the Cumaná Meeting the work of the Group was examined and the proposed Action Plan was reviewed. It was also concluded that for a better understanding of Harmful

Algal Blooms (HAB) in the Caribbean region, it is necessary to enhance the research capacity of the countries of the region, and to implement a regional monitoring programme.

108 The Group agreed to convene the Fourth Meeting of the ANCA-IOCARIBE HAB Working Group during the first quarter of 2005 in Santa Marta, Colombia.

109 Barbados mentioned that it would like to become involved within this effort and supported the work of the group. The Delegate informed the Session about the Ballast Water Convention of the IMO (International Maritime Organization). She suggested that IOCARIBE should consider greater collaboration with the Marine Environmental Protection Committee (MEPC) of the IMO to ensure that problems of harmful species transported in ballast water are addressed for the Caribbean Region. IOCARIBE Member States should consider signing the convention when it is open for signature. It is necessary to establish liaisons with National Focal Points of IMO to stay updated on IMO ballast water and other relevant MEPC initiatives.

110 **The Sub-Commission endorsed** the Report of the Third Session of the IOCARIBE HAB-ANCA-III **and approved** [Recommendation SC-IOCARIBE-VIII.3](#) and [Recommendation SC-IOCARIBE-VIII.13](#).

5.1.4 White Water to Blue Water Initiative (WW2BW)

111 Mr Bradford Brown, IOCARIBE Vice-Chairman, introduced this item.

112 He referred to the main purpose of the White Water to Blue Water (WW2BW), which is: (i) the promotion of a cross-sectorial approach to the management of watersheds, coastal zones and marine ecosystems, and (ii) improved regional communication and collaboration between major stakeholders of the Wider Caribbean (governments, non-governmental organizations (NGOs) and foundations, corporations, international organizations, and universities) in support of a world-wide commitment of the Governments present at the World Summit in Johannesburg to address sustainable development needs through a science based management of natural resources.

113 He informed that the Intergovernmental Oceanographic Commission (IOC) of UNESCO and its regional Sub-Commission IOCARIBE are partners of the initiative and also belong to the Steering Committee.

114 He recalled that the WW2BW Initiative promotes: (i) fostering partnerships as its main focus; (ii) future core funding; (iii) establishment of teams by participating countries; and (iv) providing greater coordination among donor agencies. The involvement of IOCARIBE as partner of the WW2BW Initiative is a step forward for regional coordination.

115 Trinidad & Tobago highlighted that the Miami WW2BW Conference was very successful, particularly for Trinidad & Tobago.

116 Cuba expressed its willingness to participate in any future projects and partnerships resulting from the Conference.

117 Barbados expressed its appreciation for the Conference. The Delegate mentioned that the capacity-building component was well organized and it will be critical in future coastal zone management capacity building initiatives.

118 The Representative of UNEP regretted that Cuba was not represented at the Conference and agreed to continuing involving Cuba as WW2BW partnerships. He mentioned that UNEP is responsible for maintaining the Web site Conference.

119 The USA informed the meeting of the success of WW2BW in bringing many representatives the region. The Delegate stated the scientists at the meeting expressed disappointment for the absence of colleagues from Cuba at the Conference. As well, he noted that Cuba was already included in a number of partnerships and it is expected that Cuba's involvement would be significant in those efforts.

120 At the Wider Caribbean Region Stakeholders Conference of the WW2BW Conference in Miami (22–26 March 2004) over 100 partnerships were established during the week, and many other potential ones identified. They ranged in scale from very local to regional and from highly research-oriented to very applied ones. Many of these partnerships have the potential to contribute greatly to the goals of IOCARIBE-GOOS and of the Caribbean Large Marine Ecosystem (C-LME). These will be further explored and developed as IOCARIBE-GOOS and C-LME partners that may either contribute to the financing of the programme.

121 In this Conference, IOC/IOCARIBE, UNEP-RCU and the Swedish International Development Agency launched a partnership called “Regional Network in Marine Science and Technology for the Caribbean: The Know-why Network”.

122 **The Sub-Commission adopted [Recommendation SC-IOCARIBE-VIII.4](#)**

5.1.5 Integrated Coastal Area Management (ICAM): MIN-LAC Project

123 Ms Lorna Inniss, IOCARIBE Vice-Chairperson, introduced this item and presented an overview on recent development of the ICAM Project.

124 A Workshop was convened for the Formulation of a Draft Project on Integrated Coastal Management (ICM) in Latin America and the Caribbean, (Cartagena, Colombia, 23 – 25 October 2003).

125 She informed the meeting that the main objective of the Workshop was building up a regional project on Integrated Coastal Management (ICM) based on the concepts of cooperating networks, exchange of experiences and capacity building.

126 Integrated Coastal Management (ICM) is now viewed as an essential approach to the sustainable development of oceans and coasts. Agenda 21 began the process of placing ICM on the world's agenda and WSSD 2002 reinforced that effort.

127 Ms Inniss recalled that as with many environmental initiatives in the region, the situation varies from no ICM being practiced, to sophisticated, successful Coastal Zone Management (CZM) programme with the accompanying legal, policy and institutional capacity required for implementation. Of course, there are many types of ICM programmes, which fall between these two extremes.

128 Trinidad and Tobago expressed support for the ICAM Project. She recalled that there are other initiatives ongoing in the region. The Delegate stressed the importance of collaboration with those other similar initiatives.

129 Venezuela discussed conflicts and concerns that might arise in the management of CZM resources. He stressed that to reduce conflicts it would be necessary that countries work together in the establishment of a legal framework to address these matters.

130 Colombia congratulated Ms Inniss for her excellent presentation about the ICAM Project. The Delegate also expressed the importance of highlighting the governance component. There is a consensus in Colombia for supporting the project.

131 Ms Maria Cordelia Soares Machado (Brazil), Sea and Antarctica Advisor referred to the Workshop “Tools for Integrated Coastal Zone Management (ICM) in Latin America and the Caribbean (LAC)” previously held in Recife on 12–13 April 2004. The specific objectives of the Workshop were to:

- Exchanging and sharing among key actors the basic ideas and partners of the Integrated Coastal Management (ICM) in Latin America and the Caribbean.
- Identify and develop managerial tools for ICM
- Suggesting possible scopes, roles and involvement mechanisms for the participating institutions.
- Agreeing an agenda for the next project preparation steps.

132 The Representative of UNEP, Mr Nelson Andrade highlighted the importance of seeking cooperation mechanisms from countries in order to obtain support for the ICAM Initiative.

133 The IOCARIBE Chairman thanked participants for their presentations.

134 **The Sub-Commission adopted [Recommendation SC-IOCARIBE-VIII.5](#).**

5.2 OCEAN SERVICES SECTION

5.2.1 Oceanographic Data and Information Exchange (IODE)

135 Mr Rodney Martinez, Ocean Data and Information Network for the IOCARIBE and South American Regions (ODINCARSA) Regional Project Coordinator (RPC) introduced an overview on recent developments of the Oceanographic Data and Information Exchange (IODE) Programme. The IOC Executive Council at its 35th Session, decided to establish a Task team on the Development of a Unified Comprehensive IOC Strategic Plan for Oceanographic Data and Information Management. This Task team was requested to:

- carry out an assessment of data and data-product requirements of existing oceanography and marine meteorology programme/project, and evaluate whether these are currently met by the various groups of IODE data centres;
- take into consideration existing data management plans such as the GOOS data management plan and relevant World Meteorological Organization (WMO) data management plans;
- draft an IOC Strategic Plan for Oceanographic Data and Information Management, taking into consideration the requirements of the plan in the framework of the Joint Technical Commission for Oceanography and Marine Meteorology (JCOMM).

136 Mr Martínez explained that IODE was established in 1961 *‘to enhance marine research, exploitation and development by facilitating the exchange of oceanographic data and information between participating Member States and by meeting the needs of users for data and information products’*.

137 IODE is now a network of nearly 70 data centres including three World Data Centres Oceanography, 64 National Oceanographic Data Centres (NODCs) (and Designated National Agencies) and 10 Responsible National Oceanographic Data Centres (RNODCs)

138 Three Groups of Experts guide the programme: (i) JCOMM/IODE Expert Team on Data Management Practices (formerly IODE GE-TADE); (ii) IODE Group of Experts on Marine Information Management (GE-MIM); and (iii) IODE Group of Experts of Biological and Chemical Data Management and Exchange Practices (GE-BCDMEP).

139 IODE implements projects at the regional as well as global scale. Global projects include ASFA, GTSP, GODAR, GOSUD, OceanExpert, MEDI, marineXML, Ocean Portal, Regional Ocean Portals, OIT, and OceanTeacher. Regional projects focus on capacity building. IODE’s approach to capacity building has changed substantially in the past decade: initially focusing on national/regional workshops, training courses and internships only, IODE now approaches capacity building in a regional context through the development of networks. This new approach has been called ‘ODIN’ which stands for Ocean Data and Information Networks and it has been implemented in Africa (ODINAFRICA) and it is now being implemented in the Caribbean and South American regions (ODINCARSA).

140 In order to use a standard training system for all capacity-building activities IODE also developed a comprehensive “encyclopaedia” and teaching system called OceanTeacher.

141 Mexico thanked Mr Martínez for his good presentation and work done. The Delegate raised a question about the role played by the data centres in the new data system. He also expressed his concern about validation and compatibility of data.

142 Venezuela mentioned that it faces challenges in establishing data centres and expressed concern about confidentiality of data.

143 The IOC Vice-Chairman, Dr Mario Ruivo requested further information about the relationship between the work of ODINCARSA and CPPS.

144 Mr Martínez mentioned that there is a Memorandum of Understanding (MOU) between IOC and CPPS in place, which creates an opportunity for ODINCARSA to cooperate especially on ocean data management of Regional Cruises, coordinated by the Permanent Commission for the South Pacific (CPPS) on South Eastern Pacific Region.

145 The Representative of UNEP thanked Mr. Martínez for his interesting presentation and requested information about the environmental data. It was explained that this kind of information today is a priority and there are some efforts to facilitate the management of this information by IODE Expert groups.

5.2.2 Ocean Data and Information Network for the Caribbean and South America (ODINCARSA)

146 Mr Rodney Martínez, ODINCARSA Regional Project Coordinator (RPC), introduced this item.

- 147 Mr Rodney Martínez introduced the ODINCARSA Project and explained that it was established primarily as a mechanism for assessing the current and potential state of development of national data centres and to create the means for mutual capacity-building in South America and the Caribbean. It further seeks to develop a cooperation network for managing and exchanging oceanographic data and information within these regions. ODINCARSA is a network currently composed of eighteen IOC Member States: Argentina, Bahamas, Barbados, Belize, Brazil, Colombia, Chile, Cuba, Dominica, Ecuador, Jamaica, Mexico, Nicaragua, Panama, Peru, Saint Lucia, Trinidad and Tobago and Venezuela.
- 148 Since the beginning of the project in October 2001, much has been achieved: a planning workshop where main needs of the region were identified and a work plan prepared; the first training workshop on Data Management (Guayaquil, Ecuador, May 2002), the first training workshop on Marine Information Management (Mazatlan, Mexico, October 2002); the second training course for regional trainers on data management (Cartagena, Colombia, October 2003), and a Planning workshop for Caribbean islands held in Barbados (December 2003).
- 149 ODINCARSA has enhanced through the different workshops the necessary skills to strengthen, at national and regional levels, the interaction between the National Oceanographic Data Centres, Marine Information Centres and Libraries. In addition relevant institutions and contact persons have been identified to consolidate ODINCARSA as a cooperative network.
- 150 ODINCARSA has promoted and supported the development of specialized groups in the region to strengthen expert and resource networking to share the existing capabilities between the Member States. One of these groups is the Latin American IAMSLIC Group which is working with ODINCARSA on Marine Information Management issues. It involves more than 27 libraries in the region. Other working groups have been working on regional products and services such as the Regional Directory of Experts www.ioc.unesco.org/carsadir, (part of the global OceanExpert: <http://www.oceanexpert.net>), the regional Ocean Portal (PortalOceanico <http://www.portaloceanico.net>), and the Regional Libraries Catalogue. There is also a recently formed working group for the translation of Ocean Teacher into Spanish.
- 151 During the Ocean and Data Information Workshop in the Caribbean Region held in Barbados, 18–20 November 2003, the ODINCARSA Action Plan was reviewed as well as other relevant initiatives that could contribute to the development on the network with special emphasis on the Caribbean States. Some important issues were addressed during this meeting, and they are: Data repatriation, capacity building, technical assistance, data inventories and data rescue, coordination of activities on Capacity building sharing resources with other programmes like GOOS and ICAM.
- 152 Mr Martinez emphasized the execution of the budget priorities where more than 65% has been used on training and support of experts of the region. He requested assistance in obtaining the necessary support to continue the activities in the Caribbean.
- 153 Venezuela thanked Mr Martinez for his presentation and expressed its interest in continuing actively participating in the project.
- 154 Cuba thanked him for the report and congratulated Mr Martinez for the work done. The Delegate expressed the concern of his country about repatriation of collected data. He also mentioned that ethical principles must be taken into account in data centres from all countries. This can be an obstacle especially for small islands that cannot afford to purchase data that originated in their jurisdiction.

155 The IOC Secretary for IOCARIBE congratulated Mr Martinez for the implementation of the project. He highlighted ODINCARSA as an important project connected to many other projects. He noted the capabilities of Regional Training within the project. He also stressed that ethics and copyright are complex issues that should be taken into account when sharing of data and information is demanded. He remarked the need to provide additional funding to ODINCARSA to allow the project to continue supplying ocean data and information services to users and other IOC programmes such as GOOS and ICAM.

156 Mr Ehrlich Desa, Head of IOC TEMA Section, mentioned the need for including satellite and modelling data. A mechanism has to be established for bringing this data into place.

157 The IOCARIBE-GOOS Regional Project coordinator, Mr Douglas Wilson, mentioned that much more coordination is needed at the programme level. We need to deal with the fact that all programmes collect data and not all of them are involved.

158 Trinidad and Tobago thanked Mr Martinez for his presentation and thanked the IODE Regional Coordinator and IOCARIBE for the sponsorship of the Workshop for Caribbean Small Islands.

159 Barbados mentioned the difficulty of dealing with data in the Region, mainly because of the diversity of capacities in data collection and management.

160 The representative of the Caribbean Regional Fisheries Mechanism, Mr Terrence Phillips informed that many issues that were identified here are also identified in CRFM programmes. He informed the Session CRFM's willingness to cooperate with IOCARIBE.

161 The IOC Vice-Chairman restated the decision of IOC to continue giving high priority to and to assist the development of TEMA and Capacity Building, particularly at the regional/sub-regional levels and taking into account the priorities of Member States. He mentioned the necessity for increasing cooperation with various partners in order to mobilize resources.

162 **The Sub-Commission adopted [Recommendation SC-IOCARIBE-VIII.6](#).**

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

163 Mr José Luis Frias, IBCCA Regional Project Coordinator (RPC), introduced this item.

164 He informed the Session about the Eighth Meeting of the IOC Editorial Committee for the International Bathymetric Chart of the Caribbean Secretariat and Gulf of Mexico (IBCCA) that took place in Boulder, Colorado, USA on 3–5 March 2003.

165 During the Session participants agreed to

- Review the IBCCA website in order to make the necessary changes;
- Review the colour proofs of IBCCA Sheets number: 1-02, 1-03, 1-04, 1-05, 1-06, 1-09 and 1-11 and send comments to the Chief Editor through IBCCA e-mail;
- Consult with geology and geophysics experts to determine possible interest in participation for the creation of a geological and geophysical digital database to IBCCA.

166 Cuba congratulated Mr Frias for his presentation and work done in accomplishing this task.

167 Venezuela mentioned that it is necessary to encourage France to provide the data needed to complete the project.

168 Mr Frias recommended that the Editorial Committee should meet on an annual basis to complete the programme.

169 Colombia stressed its commitment to this project and proposed to convey, via the relevant channels, the need for delivering the data for completion of this project.

170 The IOCARIBE Chairman emphasized that several difficulties were overcome through cooperation and collaboration in this project. He recalled the need of sharing resources by the countries and encouraged France to deliver necessary data for the final completion of the project.

171 The IOC Secretary for IOCARIBE emphasized the importance of IBCCA and encouraged countries to get involved. He also added that planning is the key for success and in the IBCCA case resulted in a high quality product despite many obstacles and difficulties.

172 **The Sub-Commission noted** with satisfaction developments on the International Bathymetric Chart for the Caribbean and Adjacent Regions (IBCCA).

173 **The Sub-Commission adopted** [Recommendation SC-IOCARIBE-VIII.7](#).

5.2.4 Tsunami Warning System for the Caribbean

174 The IOC Secretary for IOCARIBE, introduced this item. He elaborated on the report prepared by Mr George Maul, Regional Project Coordinator of the Tsunami Warning System for the Caribbean, on main developments of the project.

175 The IOC Vice-Chairman mentioned that a prioritisation between and within projects must be made.

176 Venezuela mentioned the importance of tsunamis and stressed that countries in the region that are affected need to work together.

177 Mexico was very interested in the review of the project. This project should be expanded with outreach and mitigation extended to cyclones and other weather phenomena.

178 The USA expressed difficulty with this project because of the inability to obtain the large funding necessary for the warning system. The Delegate suggested that it might be wiser to focus on mitigation and education efforts. In addition, a possible strategy would be the creation of a warning system within the GOOS framework for obtaining better information that could lead in the future to forecasting.

179 Colombia stressed the benefits of having available a risk mapping system for developing emergency plans.

180 The GRASP Coordinator and member of the Tsunami Group of Experts, Mr Rodrigo Nuñez, recommended that focus should be placed on education. He mentioned that support is needed for the preparation of mapping risks for this region. He also stressed that it should be possible to disseminate information to public schools.

181 The IOC Secretary for IOCARIBE stated that periodic evaluation of a programme is necessary especially when it is not progressing as originally planned. He stressed on the importance of education and mitigation. He also mentioned that there are other IOCARIBE projects that are related to the Tsunami programme such as IOCARIBE-GOOS and that it is necessary to strengthen links between them for a more efficient project implementation.

182 **The Sub-Commission adopted [Recommendation SC-IOCARIBE-VIII.8](#).**

5.3 OPERATIONAL OBSERVING SECTION

5.3.1 Global Ocean Observing System (GOOS): IOCARIBE GOOS

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

184 During the Sixth Intergovernmental Session of the Sub-Commission (San José, Costa Rica, 26–29 April, 1999), it was decided to establish and develop a regional component of the Global Ocean Observing System, to be known as IOCARIBE-GOOS (Rec. SC-IOCARIBE-VI.1).

185 IOCARIBE-GOOS is a basic source of information, services and products to support sustainable social and economic development, welfare, and safety, through systematic observations and associated research on coasts and seas in the IOCARIBE region. The system should be operational in nature and designed to yield products and services that meet the needs of users. It should provide information on the past, present and future state of the marine and coastal environment, on marine ecosystems and biodiversity, and on weather and climate variability. It should be also a tool for integrated management of the coastal zone. International cooperation and capacity building are essential to the effective operation of the system and to enable potential users to benefit from it.

186 As a follow-up of Recommendation SC-IOCARIBE-VII.1 and to continue with the work of the Ad Hoc Advisory Group for IOCARIBE-GOOS, the IOCARIBE-GOOS Steering Committee was formally established. The First Meeting of the IOCARIBE-GOOS Steering Committee, organized in collaboration with the National Oceanic and Atmospheric Administration (NOAA), was convened in New Orleans, USA, 2–3 June 2003.

187 An important step in programme development was the approval of IOCARIBE-GOOS by I-GOOS as a GOOS Regional Alliance.

188 Mr Wilson informed the Session that during the meeting the General Plan of Actions (2003–2004) and the Terms of Reference for the IOCARIBE-GOOS Steering Committee were reviewed. After a revision of existing systems and capability in the region, the general tasks included in the proposed plan of action were categorized into four groups: (i) assessment; (ii) initial observing system; (iii) capacity building; and (iv) programme coordination and development.

189 He presented a general overview on main activities carried out within the IOCARIBE-GOOS project which includes:

- Publication of the Integrated Design Plan for the Coastal Module of GOOS (GOOS Report 125; IOC/INF-1183)
- Participation at the two GOOS Regional Forums (Greece 2002; Fiji 2004)

- Workshop held in St. Thomas, USVI (February 2004) to develop IOCARIBE-GOOS Pilot Project modelling project to address local coastal management issues
- WW2BW Partnership Conference
- Proposal for MOU between International Sea Keepers society and IOCARIBE in support of IOCARIBE-GOOS
- Development of US Regional Observing System Implementation Plan and its impact in IOCARIBE-GOOS.

190 Brazil thanked Mr Wilson for his presentation. The Delegate mentioned that Brazil has an active GOOS Steering Committee, but emphasized the fact that is very difficult to integrate all the users.

191 Trinidad & Tobago also thanked the presenter and expressed the desire to have continuing information on this project.

192 The IOC Vice-Chairman expressed his appreciation for the presentation. He pointed out that good science and knowledge is needed to convert data to useful information. This approach is a most useful way to achieve such goal and, thus, helping the upgrading of national capacity to achieve Member States objectives, including effective participation in regional and global cooperation ventures.

193 Cuba mentioned that IOCARIBE-GOOS faced a number of challenges. He stated that defining end-users is critical for the purpose of identifying result-oriented projects.

194 The IOCARIBE Regional Coordinator for HAB-ANCA, Mr Nestor Mancera, stressed that the information needs to be translated and disseminated to serve the users community.

195 The IOC Secretary for IOCARIBE supported the comments made by the Vice-Chairman of IOC. He mentioned that it is necessary to have a stepwise process. He recalled that GOOS is not only an observation system but it will allow us to have necessary data and information needed for scientific projects and for improving our knowledge. He added that focussing on needs is necessary to move it forward.

196 **The Sub-Commission approved [Recommendation SC-IOCARIBE-VIII.9](#).**

5.3.2 GRASP Alliance

197 Mr Rodrigo Nuñez, Regional Project Coordinator for GRASP (GOOS Regional Alliance for the Southeast Pacific) introduced this item to the Session.

198 He presented an overview on main activities and advantages 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.

199 GRASP was established (Cartagena, Colombia, 30–31May 2003) by a Consortium of Research Institutions of Colombia, Ecuador, Peru, Chile and USA to promote, implement, and manage relevant aspects of GOOS in the Southeast Pacific Region. These Institutions are dedicated to develop and improve regional capabilities to carry out operational oceanography in

the Southeast Pacific ocean. The objectives of the system will be the same as the Global System modified with specific objectives to meet fundamental needs and priorities for the sustainable development of the countries of the region.

200 A Letter of Intent was signed by participating Institutions. The Group decided to establish an Ad Hoc Group of Experts to work on the elaboration of a GRASP Strategic Plan for the Development of an Integral Ocean Observing System for the Southeast Pacific region for a 10-year period. Mr Nuñez informed the session that GRASP is using GOOS Report No. 115 *The Case of IOCARIBE-GOOS: A Strategic Plan* as the reference document to develop the Strategic Plan for the Southeast Pacific region.

201 He stressed the importance of promoting studies to evaluate the potential economical and social benefits of operational oceanography in the Southeast Pacific Region and to cooperate with other organizations involved in the study of climate change, marine environment and climate variability.

202 Furthermore, he suggested the idea to the IOCARIBE session to search for ways to develop an integrated approach to training and capacity building in South America and the Caribbean among the three regional GOOS alliances (GRASP, IOCARIBE-GOOS and the GOOS South Atlantic Alliance that is in its establishment phase). Rationale behind this proposal is to use the already developed and successful IOC programmes implemented in the region, such as ODINCARSA and GLOSS, to foster cooperation and target common training needs, with the support of the newly re-established TEMA section in IOC.

203 Mr Nuñez suggested a strategy to make better use of the available funding resources by coordinating joint workshops and training courses.

204 Venezuela thanked Mr Nuñez for the very interesting presentation and asked who coordinates and who funds GRASP. He also asked about the relationship of GRASP with Civil academic institutions.

205 Mr Nuñez responded that GRASP is formed based on a Consortium of Research Institutions coordinated at a regional and national level to develop and enhance operational oceanography. The representatives of each Institution are responsible of doing the coordination. The funding is provided by the regular budget of each Institution, and the activities of GRASP are based on achieving a more efficient and coordinated use of the available resources. With regard to the relationship with civil academic institutions he expressed that these are seen as equal partners of the Alliance, although government institutions, such as the navies, fund most of the operational activities.

206 Mr Erlich Desa, Head of IOC TEMA Section, expressed his readiness to foster activities of the regional alliances.

207 The IOCARIBE Chairman asked the Sub-Commission if the proposal for an integrated approach to training and capacity building can be coordinated and implemented by IOCARIBE. **The Sub-Commission fully supported** the suggestion.

208 The IOC Vice-Chairman mentioned that the panorama presented was very interesting and facilitates IOC coordination. The idea of coordinating activities among the regional alliances is an important goal of I-GOOS.

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

209 Mr Ehrlich Desa, Head of IOC TEMA Section introduced this item as being a coherent capacity building strategy for the IOC. Recently initiated, the strategy emphasizes in the medium term, education initiatives and increases focus on coastal zone issues, utilizing remote sensing and modelling methods where appropriate.

210 The reason for paying greater attention to the coastal zone arises from the fact that it has a large number of users and feedback from its misuse and mismanagement is usually rapid and obvious. This zone therefore has the advantage of demonstrating to decision-makers, more immediately, the benefits of investing in ocean sciences and services. The strategy does not neglect the open ocean, recognizing it as an integral part of coastal zone processes and of great importance over the longer term.

211 Remote sensing methodologies have received the attention of the IOC Executive Council at its 36th Session and the IOC Assembly at its 22nd Session and are pursued along instructions given through Resolutions.

212 Modelling is an important technology factor into capacity-building schemes since rapid increase in computational power makes it ever easier to run many useful models from small workstations. It is also a step up in the value chain from operational data, and can make powerful statements to decision makers to invest in ocean sciences and operations.

213 The IOC TEMA Section, with support from other main lines of action, will act as the nucleus for coordinating, catalysing, controlling and overseeing all TEMA and capacity building activities, so that capacity building becomes an effective and visible programme of the IOC.

214 The strategy proposes several new initiatives such as the establishment of Research Centres of Excellence, modern information and communication tools, distance learning programmes, and several initiatives for raising resources.

215 Efforts within countries will focus on:

- creating local university-institute-industry networks to service local coastal users;
- providing a framework for organizational leadership to interact;
- networking these organizations so they can participate in major externally funded coastal projects in their country;
- new initiatives to involve industry partners in capacity building with a view to expanding technology transfer.

216 Efforts within IOCARIBE regions will focus on:

- determining regional needs as identified by national science plans;
- working with regions on proposals that combine complementary strengths to produce regional resource nodes of international competence in specific areas;

- working with institutes to establish networks of professional scientists and managers to create operational products for customers in the proposed regional resources nodes;
- developing a coastal version of the Training-Through-Research programme.

217 The strategy will be implemented with the support of IOC Headquarters, IOC Regional Sub-commissions, IOC related offices and committees and the UNESCO-IOC Chairs programme.

218 Cuba congratulated Mr Erhlich for his work and efforts within only four months.

219 Venezuela congratulated Mr Erhlich for his excellent presentation and efforts in summarizing what we have been experiencing in attempting to build capacity.

220 The USA welcomed Mr Desa Erhlich to the region and expressed willingness to work with and learn from the India experience on management of capacity building. The Delegate highlighted the importance of this issue and its usefulness for all countries. This is something that we can all participate within and learn from each other.

221 The IOC Vice-Chairman acknowledging the presentation of the Head of IOC TEMA Section, was pleased to notice the new approach used to mobilize external support and funding resources in the capacity building programme of IOC. He also mentioned that it was convenient to have someone at the table who is directly involved in the programme.

222 The Representative of UNEP, Mr Nelson Andrade Colmenares, also congratulated Mr Erhlich for his comprehensive report and presentation. He looked forward for new opportunities for continuing working with IOC.

223 **The Sub-Commission acknowledged** progress obtained in Capacity Building and encouraged its Member States to get actively involved in the initiative.

224 **The Sub-Commission approved** [Recommendation SC-IOCARIBE-VIII.10](#).

6.1 SCIENTIFIC NATIONAL PLANS

225 The Chairman introduced this Agenda Item to the Session. He reported on efforts made for promoting the establishment/strengthening of national oceanographic commissions (National Committees for the IOC) to act with IOCARIBE National Focal Points within Member States, recalling IOC Circular Letter No. 2017 and Resolution XII-8 of the 12th Session of the Assembly, in 1982, which expressly urged the Member States of the Commission *“to improve or establish, as required, National Oceanographic Commissions or equivalent bodies, composed, as appropriate, of representatives of interested government departments, universities and research institutions actively involved in marine science and technology and other relates aspects of ocean affairs; to maintain liaison with national users of the results of marine scientific research; to work closely with other national institutions and international organizations concerned with this multidisciplinary fields; and to develop and support marine science activities, using the mechanisms proposed in the Comprehensive Plan, ensuring the close involvement of their national scientific community.”*

226 He stressed the importance for the Member States to know their available capacities. IOCARIBE needs to have an inventory to effectively carry out its mission. IOC sent a Circular Letter to Member States (IOC Circular Letter No. 2017) requesting this information

227 The IOC Vice-Chairman, Mr Mario Ruivo, highlighted the importance of having national profiles and noted they would provide valuable information for IOC. He also mentioned that Portugal was a pilot country on developing such a profile.

228 **The Sub-Commission stressed** on the need to promote the creation of a Regional Inventory of Scientists and Institutions dealing with ocean and IOC matters.

229 National profiles already available should have a contact point. **The Sub-Commission instructed** the IOC Secretary for IOCARIBE to publish a CD containing national profiles to be advertised in the website.

230 Venezuela expressed the necessity and concern for updating this information.

231 IOCARIBE website is being re-designed specifically to serve as a dynamic platform whereby its members are its main editors. It should be a virtual meeting ground where the scientists of our region can inform themselves, exchange documents, meet and grow. An individual page will be available for each Member State. The Member States page will include a member profile and individual banner. When the web site becomes functional depends on input of content from each of the Member State. The news and event section of these pages will be structured for members to update themselves by utilizing the community content manager Beebox, a user-friendly platform that facilitates this process. A Webmaster will be available to assist Member States and hear any suggestions they may have to improved our web site.

232 The IOC Secretary for IOCARIBE asked Member States to assign a person, who should act as editor. Initially, he recommended that the National Focal Point might act as such a person or for those Member States that have already an editor for ODINCARSA, he or she could be assigned for this task.

233 Cuba mentioned it is important for the Secretariat to move ahead as quickly as possible.

234 **The Sub-Commission noted** with satisfaction progress made **and encouraged** the Secretariat to pursue this effort.

6.2 PRIORITIES AND EXPECTATIONS OF MEMBER STATES

235 Ms Lorna Inniss, IOCARIBE Vice-Chairperson, introduced this item. The Sub-Commission takes into consideration the priorities and capacities of Member States. IOCARIBE has gradually increased the participation of Member States in the activities of the Sub-Commission by encouraging appropriate national authorities to actively participate in the activities of the Sub-Commission.

236 Small islands require special attention within the context of capacity building. In many cases concrete involvement in IOCARIBE programmes and Sessions might be on an aggregate scale, where regional, political scientific or development organizations represent groups of small countries. However, in keeping with the concept that capacity building must come from within, all Member States need to make the efforts to assist each other in building capacity. Lack of technology, specific expertise and appropriate methodologies are easily addressed through mutual assistance, taking capacity building to new lengths beyond training and education.

237 Venezuela expressed the willingness of his country to get involved in four Regional Projects:

- Bathymetric Charts

- Capacity Building
- CARIACO —Caribbean Basin; Venezuela wants to transform this bilateral project to IOC Caribbean Project and suggest the results could be presented to the IOC Assembly
- Utilize research used to do bathymetric research by all Member Countries.

238 Venezuela gave a review on the CARIACO project that has demonstrated capacity to produce new data for the interpretation of the physics, chemical, biological and sedimentological phenomena in the superficial water and in the water column of one permanent station since November 1995 in CARIACO basin. One of the important results is a great number of scientific papers, as well as in capacity building.

239 Venezuela proposed that the IOCARIBE Award should be given not only to individuals, but also to research groups or technical units such as the researchers group of the CARIACO project.

240 Cuba proposed that the Sub-Commission review the procedure for conferring this award. He mentioned that the formulation of a working group to submit proposals to be considered would be a good mechanism to be used.

241 Venezuela proposed to establish a Biennial Scientific Commemorative Lecture of regional interest to make authorities and the public aware of the activities and results of the cooperative ocean investigations in the IOCARIBE region. He stressed the need to recognize the value of the scientific lectures organized by IOC during its Assembly.

242 Cuba agreed with this initiative and proposed the creation of a working group to draft a recommendation.

243 Mexico also supported this motion.

244 **The Sub-Commission requested** Member States to propose a name for the Scientific Commemorative Lecture Series before the next Session of the Sub-Commission IOCARIBE-IX in 2006.

245 Colombia mentioned the importance of capacity building through training, as human resources are very important in order to improve quality of life for all.

246 Barbados addressed capacity building for Small Island Developing States. He stressed the need to identify IOCARIBE mechanisms/strategies to bring more small islands States that are notably absent into projects and programmes.

247 The Chairman stated that there are other ways to support the Sub-Commission beyond money/funding. For example: Brazil support of this meeting. Sometimes countries can contribute with intern resources rather than transferring funds outside. He requested Member States of the Sub-Commission to consider contributing by giving support to IOCARIBE through mechanisms such as supporting IOCARIBE Workshops in their countries.

248 **The Sub-Commission approved** [Recommendation SC-IOCARIBE-VIII.12](#).

6.3 GREATER CARIBBEAN CONFERENCE ON SCIENCE,
TECHNOLOGY AND THE ENVIRONMENT

249 Mr Guillermo Garcia, IOCARIBE Vice-Chairman, presented this agenda item. He informed the Session about the initiative between UNESCO and the Cuban Science Academy to organize a regional Conference to discuss scientific issues. One main goal would be to identify necessary policy elements for scientific observations. The environment will play a key role, as the most important resource we have. The Conference will be held in Havana next November.

250 The IOCARIBE Chairman proposed the establishment of a working group for IOCARIBE to cooperate with this effort composed of Cuba, Mexico and Venezuela.

7. INSTITUTIONAL AND LEGAL FRAMEWORK

7.1 STATUS OF COOPERATION WITH OTHER ORGANIZATIONS

251 The IOC Secretary for IOCARIBE gave a general introduction on the progress made in establishing cooperation with international organizations and other regional programmes.

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

253 Mr Bradford Brown, IOCARIBE Vice-Chairman informed the Session on the Mission to the CARICOM Countries. During the second week of March 2004 a Mission to the CARICOM Caribbean countries took place with participation of the IOC Executive Secretary, Dr Patricio Bernal and the IOC Secretary for IOCARIBE, Mr Cesar Toro and Mr Brown to Jamaica, Barbados, Trinidad & Tobago and Guyana. The main purpose of the mission was the development and enhancement of the participation of the CARICOM Member States in the activities of the Sub-Commission. An establishment of a Memorandum of Cooperation between the Sub-Commission IOCARIBE and CARICOM to promote scientific research in the Caribbean is envisaged.

254 IOCARIBE looks forward to further effects. Mr Cesar Toro, Mr Guillermo Garcia and Mr Marco Polo Bernal plan to visit Spanish-speaking countries to increase their involvement in IOCARIBE by May 2004.

255 Barbados welcomed the initiative by IOCARIBE to visit countries in the Region and encouraged similar effects to other small islands States. He also mentioned that it is necessary to establish a series of networks of experts and to provide means for outside entities to make contact with professionals at universities.

256 Brazil considered these visits important and urged to consider visiting countries in adjacent regions. The Delegate also expressed the necessity of strengthening the Brazil North Coast, Pará and Amapá —the Caribbean Adjacent Region part of Brazil.

257 Venezuela and Mexico both supported the initiative of visiting countries.

258 Representatives from cooperating Organizations, present at the Session, provided information about their Organization's programmes, which complement those of IOC and IOCARIBE, and about on-going cooperation.

259 Mr Nelson Andrade, UNEP Regional Coordinator reported on the standing Memorandum of Cooperation between UNEP-CAR/RCU and the Sub-Commission signed during the last Seventh Session of the Sub-Commission (Veracruz, Mexico, February 2002). He referred to the implementation of several activities carried out in conjunction by UNEP and the IOCARIBE Sub-Commission for the protection of the marine coastal environment of the Wider Caribbean region such as the Caribbean Large Marine Ecosystem.

260 Cuba expressed satisfaction with the progress in the way things have been developed in the region, especially in regard to cooperation between UNEP and IOCARIBE and how this is critical for programmes to move forward.

261 Venezuela would like to share this congratulation. The Delegate recalled that several overlaps had occurred in the past resulting in complaints, but now the communication is improving.

262 The USA noted that partnerships are now being developed in several areas between these regional organizations and that is the way for the future to move forward.

263 The IOC Secretary for IOCARIBE noted the importance of having regional solutions to meet regional problems and of strengthening links between United Nations Bodies such as the MOU subscribed with UNEP's Regional Seas Programme.

264 The IOC Vice-Chairman informed that IOC is now entering into a new phase of cooperation with other UN Agencies. It is moving steadily, through the concerted initiatives of Member States, from promotion and planning to action.

265 The representative of the Caribbean Regional Fisheries Mechanism (CRFM), Mr Terrence Philips, gave an overview of the CRFM pointing out that it was launched on 26–27 March 2003 in Belize City where the headquarter is located. CRFM is comprised of eighteen Member States, including Antigua and Barbuda, the Bahamas, Barbados, Grenada, Guyana, Haiti, Jamaica, St Kitts and Nevis, St. Vincent and the Grenadines, Trinidad and Tobago and the Turks and Caicos Islands. He indicated that the mission of the CRFM is “*to promote and facilitate the responsible utilization of the Region's fisheries and other aquatic resources for the economic and social benefits of the current and future population of the region*”, noting that in the formation of the CRFM the Member States had identified major challenges and priority needs that fell within nine areas, with some of these being:

- Improving the research and information capacities to enhance planning, effective strategic policy formulation and sound decision-making;
- Improving access to technology and systems of harvesting and processing to become environmentally sound and product quality oriented and improve global competitiveness;
- Improving Fisheries resource assessment and management;
- Empowering and developing human resources to spearhead the necessary modernization, resource management and production practices in the industry;
- Empowering and enabling the fisheries and community organizations to be more effective co-management partners.

- 266 He expressed his willingness to collaborate with IOCARIBE, identifying the development and implementation of the CLME Project, and the ODINCARSA Projects as possible areas for collaboration.
- 267 Barbados addressed the potential role of the University of the West Indies (UWI) as a collaborator with IOCARIBE. UWI serves all CARICOM countries, of which most are SIDS. UWI is willing to play an active role in promoting the work of IOCARIBE in these countries. UWI has campuses in three countries Barbados, Jamaica and Trinidad & Tobago. Although these are to some extent autonomous, UWI is a single university and has recently been seeking to improve coordination among campuses with a view to facilitating access by external entities to the university as a single entity. To this end, UWI has mandated Professor Wayne Hunte, Vice Chancellor for the Office of Research to develop a programme of work to integrate research within UWI.
- 268 One component of this programme is the development of intra-university research networks. The first of these, the UWI Environmental Network, was established in December 2003. This network links more than 80 professionals in UWI, most with interest in coastal and marine science and management, and provides a means of accessing the entire UWI environmental community with a single input. Access can be through Professor Hunte (pvcresearch@uwichill.edu.bb), or any of the three campus network coordinators: Professor Serwan Baban, St. Augustine, Trinidad (sbaban@eng.uwi.tt); Mr Dale Webber, Mona, Jamaica (dwebber@uwimona.edu.jm); and Mr Robin Mahon, Cave Hill, Barbados (rmahon@uwichill.edu.bb)
- 269 The IOCARIBE Chairman introduced to the Session a new proposal: Marine Science Ecosystem in Latin American and Caribbean countries prepared by IOC and the Canadian International Development Agency (CIDA) of Canada which has as one of main goals the identification of common problems and current constraints in coastal and marine environmental management.
- 270 The IOC Secretary for IOCARIBE informed the Session that IOC, IOCARIBE and CIDA of Canada are exploring the viability of a Latin America and the Caribbean Hemispheric Marine Environmental Criteria Capacity Building Programme. An informal meeting “Latin America and Caribbean Session on Oceans, Marine Affairs and Fisheries” was held in Paris during the 22nd Session of the IOC Assembly, June 2003. A discussion paper was developed as a first step in this process.
- 271 Cuba highlighted that the proposal would make available additional strengths to the marine sciences.
- 272 Trinidad & Tobago stated that the Institute of Marine Affairs would like to be involved in and supported this effort, and noted a similar very successful CIDA project in Asian countries and hope this will have same results.
- 273 The Marine Science in Latin America and the Caribbean project proposal is given in [Annex V](#). Member States are asked for input into this discussion paper that will form the basis for a more formal session to develop terms of reference for a programme identification activity.
- 274 In their efforts to accelerate the implementation of the United Nations Convention on the Law of the Sea, that entered into force in 1994, the General Assembly of the United Nations through Resolution 56/12 of 2001, requested the Intergovernmental Oceanographic Commission of UNESCO to serve as a focal point in a worldwide effort to develop capacities in Marine

Scientific Research (Part XIII of the Convention) and the Transfer of Marine Technology (Part XIV of the Convention).

275 There is a wide consensus that we need to act regionally and by using flexible co-ordination and the new information and communication technologies (ICT), through them we do not need to conceive the Regional centres of the Convention as heavy brick and mortar centralized Institutions. On the contrary everything indicates that the region, can attempt to acquire the needed critical mass of scientists and technicians that it needs through the establishment and integration of networks based on national and regional pre-existing institutions. The Wider Caribbean Region has already started to find the solutions in the development of these networks.

276 In 2002 during the SC/IOCARIBE-VII, Veracruz Mexico, IOCARIBE and United Nations Environment Programme – Regional Coordinating Unit, signed a Memorandum of Cooperation as a follow-up of the United Nations instructions to enhance and strengthen the joint work of its agencies and programmes.

277 IOC/IOCARIBE, UNEP-RCU and the Swedish International Development Agency are engaged in the development of plans for such a sustained intervention in the region with the goal of re-enforcing the regional capacities in science and technology. At the Wider Caribbean Region Stakeholders Conference of the WW2BW Conference in Miami (22–26 March 2004) launched a partnership called “Regional Network in Marine Science and Technology for the Caribbean: The Know-why Network”.

278 The Representative of UNEP, Mr. Nelson Andrade, expressed support of his organization to this proposal and suggested that the document should also be presented to the European Union.

279 **The Sub-Commission approved [Recommendation SC-IOCARIBE-VIII.11](#).**

7.2 REGIONAL AND GLOBAL FRAMEWORK

280 The IOC Vice-Chairman introduced this item by describing the status of the United Nations Informal Consultative Process on Oceans led by the Executive Secretary of IOC and involving UN Agencies dealing with the oceans.

7.3 FEASIBILITY OF ESTABLISHING A REGULAR PROCESS FOR THE ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT

281 The IOC Vice-Chairman introduced this item to the Session. Mr Ruivo informed the session that during the 35th Session of the IOC Executive Council, the Governing Council of the United Nations Environment Programme (UNEP) considered Decision 21/23, adopted at its 21st Session in February 2001, calling for a feasibility study on the establishment of a regular process for the Global Assessment of the State of the Marine Environment (GMA) that will build on ongoing assessment programmes. The Government Council also requested that work be carried out “*cooperation with the Intergovernmental Oceanographic Commission of UNESCO and other appropriate United Nations agencies, the Secretariat of the Convention on Biological Diversity and in consultation with the Regional Seas programmes*”; it thereby singled out the IOC as a competent organization capable of contributing to GMA.

282 At its 22nd Session the IOC Assembly (Paris, France 24 June–2 July 2003) instructed the IOC Executive Secretary through Resolution XXII-2 to: (i) arrange an appropriate contribution of IOC and its programmes, including the feasibility of taking a leading role, to the preparation

of proposals on modalities of a regular process for global reporting and assessment of the state of the marine environment; (ii) seek, in cooperation with other relevant organizations, extra-budgetary resources, including for the Commission, in support for its involvement in a regular process for reporting and assessing the state of the marine environment, taking into account the need for the active participation of developing countries; and, (iii) to report to the next ordinary session of the IOC Executive Council, on the development of this matter, including the financial and human resources implications of IOC leading the assessment programme.

283 The USA referred to comments made by the IOC Vice-Chairman by declaring that informing the world about the importance of the oceans is a very crucial step and IOCARIBE can play a positive role in this effort.

284 Venezuela supported the establishment of a mechanism for the assessment of the state of the marine environment.

285 Barbados thanked Prof. Ruivo for his presentation and supports efforts in capacity building.

286 Brazil informed the Session that its Government would like to establish alliances and to make available to the Session the knowledge of its Universities.

287 Trinidad & Tobago also supported this effort and informed the Session that its government is involved in a project already in the pipeline for marine assessment by CARICOM and the Institute of Marine Affairs.

288 The Delegate of Colombia, Mr. Mario Palacios thanked Mr. Ruivo for his clear presentation and expressed the support of his country to this effort.

289 The Representative of UNEP, Mr Nelson Andrade, congratulated Prof. Ruivo for his presentation. He mentioned that there is a need to perform an assessment at least every five years to review the state of the marine environment.

290 The IOC Vice Chairman suggested the creation of a joint mechanism such as the establishment of a Joint Group of Experts or equivalent mechanism between IOCARIBE and UNEP to take some concrete steps. **The Sub-Commission requested** the IOC Secretary for IOCARIBE to explore such possibility in consultation with IOC and UNEP Secretariats.

291 The IOC Secretary for IOCARIBE mentioned that this mechanism should mobilize national and regional resources to give support for this assessment. There is a need to maintain a good coordination inside the countries and also from other agencies and organizations in the Region. This is an opportunity of having concrete actions and obtaining solutions to this problem. This is a dynamic process that should be monitored and updated. In this respect, he mentioned that two mandates should be considered: (i) long-term vision and (ii) IOC/IOCARIBE should consider how science and technology could be used to establish this assessment of the marine environment.

8. ADMINISTRATION AND MANAGEMENT

8.1 DRAFT PROGRAMME AND BUDGET 2004–2005

292 The IOCARIBE Chairman presented this agenda item. Document SC-IOCARIBE-VIII/2 Annex 2 “Progress Report on Budget Execution” was introduced to the Session.

293 A significant increase of the estimated budget is envisaged for the years 2004–2005, which is expected to amount up to two millions ninety one thousand US dollars (US\$ 2,091,000) which is explained by the extra budgetary support received from GEF for the C-LME project and the funds allocated for IOCARIBE-GOOS.

294 Several Member States expressed concerns about the timing between the Sessions of the Sub-Commission and the UNESCO Budgetary Biennium. **The Sub-Commission emphasized** the need to prepare a timely biennial programme concurrently with the IOC-UNESCO Biennial Programme and Budget to secure an effective support from the IOC-UNESCO Regular Budget as well as contributions from other funding sources.

295 **The Sub-Commission requested** the IOC Secretary for IOCARIBE to prepare the Biennial IOCARIBE Draft Programme and Budget 2006–2007 in coordination with the Regional Project Coordinators.

296 **The Sub-Commission approved** [Recommendation SC-IOCARIBE-VIII.14](#).

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

297 The IOC Secretary for IOCARIBE introduced this item to the Session. He briefly explained the Rules of Procedure and practical arrangements established for the election of the members of the Board of the IOC Sub-Commission for the Caribbean and Adjacent Regions.

Election of the Chairperson of the Sub-Commission

298 The Sub-Commission re-elected unanimously Mr Marco Polo Bernal (Mexico) as Chairman of the IOC Sub-Commission for the Caribbean and Adjacent Regions IOCARIBE.

Election of Vice-Chairpersons of the Sub-Commission

299 The Sub-Commission re-elected unanimously as well, following Vice-Chairpersons:

- Ms Lorna Inniss (Barbados)
- Mr Guillermo Garcia (Cuba)
- Mr Bradford Brown (USA)

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

300 The IOC Secretary for IOCARIBE introduced this item. He recalled Regional Sub-Commissions of IOC should meet every two years to review their activities and timely submit their Recommendations and budgetary request to the main governing body of IOC.

301 To commemorate 20 years since the initial establishment of the IOC Sub-Commission Secretariat in Cartagena de Indias, Colombia, Colombia kindly offered to host the Ninth Session of the Sub-Commission in the city of Cartagena de Indias in 2006, subject to confirmation from the Government of Colombia.

302 Venezuela kindly offered to host as well, the Ninth Intergovernmental Session of the IOC Sub-Commission in case the previous offer would have any difficulty in hosting it.

303 **The Sub-Commission acknowledged** these offers with appreciation and **accepted** the invitation of Colombia.

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

304 **The Sub-Commission adopted** the Summary Report and fourteen (14)
Recommendations.

305 The complete text of the approved Recommendations is included in [Annex II](#).

10. CLOSURE

306 The IOCARIBE Chairman thanked the Government of Brazil and the Ministry of Science
and Technology for hosting the meeting. Mr Marco Polo Bernal-Yarahuan gave his warmest
appreciation to the Local Organizing Committee headed by Ms Maria Cordelia Machado for the
excellent facilities provided for the organization of the Session in Recife. The Chairman
extended his remarks to the attending delegations and the Sub-Commission staff.

307 The Eighth Intergovernmental Session of the IOC Sub-Commission for for the Caribbean
and Adjacent Regions was closed at 13:50 hrs on Saturday 17 April 2004.

ANNEX I

AGENDA

- 1. OPENING**
- 2. ADMINISTRATIVE ARRANGEMENTS**
 - 2.1 ADOPTION OF THE AGENDA
 - 2.2 DESIGNATION OF RAPPORTEUR FOR THE SESSION
 - 2.3 CONDUCT OF THE SESSION, TIMETABLE AND DOCUMENTATION
- 3. REPORT OF THE IOCARIBE SECRETARY ON INTERSESSIONAL ACTIVITIES**
 - 3.1 PROGRESS REPORT ON PROGRAMMES AND BUDGET
- 4. POLICY ISSUES**
 - 4.1 IOCARIBE STRATEGIC SCIENCE PLAN AND RELATED SERVICES FOR 2001–2010
 - 4.2 PROGRAMMED ACTIVITIES FOR 2004–2005
- 5. REGIONAL PROJECTS**
 - 5.1 OCEAN SCIENCES SECTION
 - 5.1.1 Caribbean Large Marine Ecosystem (CLME)**
 - 5.1.2 Pacific Central American Large Marine Ecosystem Project**
 - 5.1.3 Harmful Algal Blooms (HAB-ANCA)**
 - 5.1.4 White Water to Blue Water Initiative (WW2BW)**
 - 5.1.5 Integrated Coastal Area Management (ICAM): MIC-LAC Project**
 - 5.2 OCEAN SERVICES SECTION
 - 5.2.1 Oceanographic Data and Information Exchange (IODE)**
 - 5.2.2 Ocean Data and Information Network for the Caribbean and South America (ODINCARSA)**
 - 5.2.3 International Bathymetric Chart for the Caribbean and the Gulf of Mexico (IBCCA)**
 - 5.2.4 Tsunami Warning System for the Caribbean**
 - 5.3 OPERATIONAL OBSERVING SYSTEMS SECTION
 - 5.3.1 Global Ocean Observing System (GOOS): IOCARIBE GOOS**
 - 5.3.2 GRASP Alliance**

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

6.1 SCIENTIFIC NATIONAL PLANS

6.2 PRIORITIES AND EXPECTATIONS OF MEMBER STATES

6.3 GREATER CARIBBEAN CONFERENCE ON SCIENCE, TECHNOLOGY AND THE ENVIRONMENT

7. INSTITUTIONAL AND LEGAL FRAMEWORK

7.1 STATUS OF COOPERATION WITH OTHER ORGANIZATIONS

7.2 REGIONAL AND GLOBAL FRAMEWORK

7.3 FEASIBILITY OF ESTABLISHING A REGULAR PROCESS FOR THE ASSESSMENT OF THE STATE OF THE MARINE ENVIRONMENT

8. ADMINISTRATION AND MANAGEMENT

8.1 DRAFT PROGRAMME AND BUDGET 2004 – 2005

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

8.2.1 Election of the Chairperson of the Sub-Commission

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

9. ADOPTION OF THE DRAFT SUMMARY REPORT AND RECOMMENDATIONS

10. CLOSURE

ANNEX II

RECOMMENDATIONS

Recommendation SC-IOCARIBE-VIII.1

FINALIZATION OF THE IOCARIBE STRATEGIC SCIENCE PLAN

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

Having considered the report of the IOC Secretary for IOCARIBE on the current state of accomplishment of Recommendation SC-IOCARIBE-VI.10, approved at the VI Session of the Sub-Commission in San Jose, Costa Rica, April 1999, to prepare the IOCARIBE Strategic Science Plan,

Noting with concern that in spite of the effort developed by the Secretariat to finalize the Strategy, it has not been completed,

Bearing in mind the importance of having this document to provide guidance to the Sub-Commission in developing its programmes and projects in short, medium and long terms,

Emphasizing the need to complete the IOCARIBE Strategic Science Plan,

Instructs the IOC Secretary for IOCARIBE to apply any alternatives he considers necessary to complete a first draft of the IOCARIBE Strategic Science Plan,

Also instructs the IOC Secretary for IOCARIBE to distribute by mail the above-mentioned first draft of the Strategic Plan to the Ad hoc Regional Group of Experts and to the Officers of the Sub-Commission for their comments,

Decides to submit the final Draft of the IOCARIBE Strategic Science for its consideration and approval by the Officers of the Sub-Commission, at its regular meeting before the end of 2004.

Financial Implications: US\$20,000 from extra budgetary resources

Recommendation SC-IOCARIBE-VIII.2

LARGE MARINE ECOSYSTEM PROJECT (LME)

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

Recalling the significant progress has been made with three LME proposed projects in the IOCARIBE Region, Caribbean, Gulf of Mexico, and Pacific Central America;

Call on:

- (i) IOCARIBE Focal Points to facilitate the signatory process in their countries;

- (ii) IOCARIBE countries in the Pacific Central America LME to designate Focal Points to participate in the planning process and the IOCARIBE Secretariat to request non-IOCARIBE Members Ecuador and El Salvador to do likewise;
- (iii) IOCARIBE to seek financing for a workshop of international nature experts and organizations to develop the concept paper of the Pacific Central American Coastal Large Marine Ecosystem (PCAC-LME) to submit to UNDP-GEF;
- (iv) IOCARIBE to reiterate its support for the three LME proposed projects;
- (v) IOCARIBE to actively pursue IOC's LME scientific oversight and co-ordination role for the three LME projects in its region

Financial Implications: US\$5,000 from IOC Regular Programme
US\$20,000 from Extra Budgetary sources

Recommendation SC-IOCARIBE-VIII.3

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

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

Recognizing that for a better understanding of Harmful Algae Blooms (HAB) in the Caribbean region, it is necessary to enhance the research capacity of the countries of the region, and to implement a regional monitoring programme,

Recognizing also the lack of information at all levels including governmental, academic and society in general, about sources and potential consequences of HAB in the Caribbean region,

Considering that due to the lack of information limited attention is addressed to this potential problem and that significant financial support has been allocated for HAB research and monitoring in the region,

Acknowledges the progress achieved by the ANCA group during the last two years;

Endorses the Report from the Third IOC Regional Science Planning Workshop on Harmful Algal Blooms in IOCARIBE, Cumana, Venezuela, 16–18 July 2003;

Recommends Member States to support regional collaboration by financial or in-kind contributions to ANCA to carry out its Action Plan 2004–2006, with the following three main activities:

- (a) Capacity building
- (b) Research/Monitoring
- (c) Communication;

Urges IOCARIBE to provide financial support, through the IOC Trust Fund, and use other modalities of support for the implementation of the ANCA programme.

Financial Implications: US\$50,000 IOC Regular Programme
US\$100,000 from Extra Budgetary sources

Item	Regular Programme (US\$)	Extra Budgetary Sources (US\$)
Capacity building	10,000	25,000
Research / Monitoring	30,000	50,000
Communication	10,000	25,000
TOTAL	50,000	100,000

Annex to Recommendation SC-IOCARIBE-VIII.3

**Working Group on Harmful Algae in the Caribbean and Adjacent Regions (ANCA)
Action Plan 2005–2006**

The Working Group on Harmful Algae in the Caribbean and Adjacent Regions decided during its Third Session held in Cumana, Venezuela from 16 to 18 July 2003, to focus their Action Plan in the implementation of three main activities: 1. Capacity building, 2. Research/Monitoring, and 3. Communication.

1. Capacity building:

Taking advantage of the regional capabilities, convene at least two (2) basic training courses during 2004–2005, to address technical elements for the assessment of red tides in the Caribbean region. A manual on Standard Operative Procedure (SOP) for HAB monitoring purposes should be prepared.

The first course should cover sampling, identification, and quantification techniques of potentially toxic phytoplankton. It will be directed to technicians involved in monitoring plans. This course should be six days long and will be conducted by Mexican and Colombian phytoplankton experts. Scientists from Denmark or Spain would be certainly welcome, and we encourage any expert from these countries to contact us for collaboration.

After completion of the course, participants and their institutions would be expected to implement a monitoring programme following the SOP to start a regional database.

The second training course should cover toxin assessment. It should be directed to technicians involved in monitoring plans. It should be six days long and will be conducted by Mexican and Venezuelan experts.

2. Research / Monitoring:

At this level three major topics were discussed as a priority: Ballast water, Ciguatera, and Paralytic Shellfish Poisoning (PSP) episodes.

Colombia already prepared the first draft of the ballast water project. This draft is under consideration by the ANCA Working Group members.

Venezuela, Mexico, and Cuba are working together to prepare a proposal to study the taxonomy and distribution of benthonic species that may cause Ciguatera.

To establish a sampling and information network in the region on episodes of PSP, Mexican researchers are standardizing the methodology for the systematic sampling along the IOCARIBE coast.

The Group suggested convening a workshop to design methods to assess the socio-economic impacts of HABs in aquaculture, fishery, and tourism.

3. Communication:

In this respect, the Group stressed the need to increase the awareness on this issue at different society levels. The creation and development of a “marketing document” to sensitise and disseminate all about HABs programmes in the Caribbean region and the role of ANCA was proposed. The Group agreed with this initiative.

The Group was requested to create and maintain the ANCA website.

The Group agreed to convene the Fourth Meeting of the Working Group on Harmful Algae in the Caribbean and Adjacent Regions (ANCA) during the first quarter of 2005 in Santa Marta, Colombia.

Recommendation SC-IOCARIBE VIII.4

WHITE WATER TO BLUE WATER (WW2BW)

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

Bearing in mind that IOCARIBE has been involved in many aspects of the White Water to Blue Water (WW2BW) Initiative, and

Recalling that the WW2BW was reported upon in the present IOCARIBE Session as being an important initiative with potential to further the objectives of IOCARIBE through the development of partnerships,

Recommends that IOCARIBE continue to participate in and support the activities of the WW2BW Initiative.

Financial Implications: None

Recommendation SC-IOCARIBE VIII.5

**INTEGRATED COASTAL AREA MANAGEMENT (ICAM)
ICAM-LAC PROJECT**

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

Recalling:

- (i) The goals of chapter 17 agenda 21 regarding sustainable development of coastal zones,
- (ii) The inclusion of ICAM as one of the priorities of IOC/UNESCO,

Acknowledging:

- (i) The complexity of integrated coastal management in the framework of coastal dynamics,
- (ii) The important role to be played by ICM in ocean management at the regional level,
- (iii) The efforts of Several Latin American and Caribbean (LAC) countries to carry out ICM activities and formulate appropriate policies,

Considering the outputs of the Workshop for the formulation of a draft project of ICAM for the Caribbean and Latin America held in Cartagena, Colombia in October 2003;

Urges IOCARIBE Member States to:

- (i) Review the Workshop report and the draft proposal for the ICAM-LAC Project;
- (ii) Provide national support to the IOC during the first project phase, so that funds may be obtained for implementation.

Financial Implications: None

Recommendation SC-IOCARIBE VIII.6

**OCEAN DATA AND INFORMATION NETWORK FOR THE CARIBBEAN AND
SOUTH AMERICAN REGIONS (ODINCARSA)**

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

Recalling:

- (i) Resolution XXI-9 to implement a regional network for marine information exchange,
- (ii) Resolution EC XXXV.6 to support ODINCARSA implementation plan,
- (iii) Recommendation IODE XVII.2 adopted by 22nd IOC Assembly to strengthen ODINCARSA activities in Caribbean and Latin America,
- (iv) The recommendations and objectives established during the First ODINCARSA Planning Workshop for Caribbean Islands,

Acknowledging:

- (i) The successful organization of the first ODINCARSA Planning Workshop for Caribbean islands, held in Christchurch, Barbados (15–18 December 2003),
- (ii) The benefits that are likely to derive from the establishment of a solid mechanism for improving integration of ODINCARSA into IOC programmes such as GOOS, TEMA and ICAM,
- (iii) The potential impact of ODINCARSA in the Caribbean and South American regions as a cross cutting project in objectives of above-mentioned IOC programmes in Caribbean region,
- (iv) The success of the initial ODINCARSA pilot project and the high level of commitment shown by the countries and organizations involved in this process,
- (v) That ODINCARSA could provide services and products, to contribute towards the sustainable management of ocean resources and coastal zones, as well as building, in parallel, an information system in the Caribbean and South American regions,

Recommends:

- (i) The IOC Secretary for IOCARIBE to initiate preparatory work for facilitating the establishment of a Regional Ocean Data and Information Center/Office for Caribbean region in cooperation with UNEP, Caribbean Regional Fisheries Mechanism (CRFM), and Organisation of the Eastern Caribbean States (OECS);
- (ii) To include ODINCARSA training activities as part of the operative plans for IOCARIBE-GOOS, TEMA and ICAM-LAC;

Urges IOC Member States in the IOCARIBE regions to:

- (i) Identify counterpart contributions and governmental political and technical commitments in order to ensure the sustainability of national and regional data and information management systems;
- (ii) Ensure that ocean data and information management (infrastructure, services and products) serve well-defined national and regional science and management priorities;

Urges IOC Member States, donors and other international organizations to support the implementation of the ODINCARSA project, through complementary activities that could strengthen ODINCARSA's development of services and products, with special emphasis on linking those that are related to GOOS, TEMA, ICAM and JCOMM, as well as through financial contributions to the IOC Trust Fund;

Instructs the IOC Secretary for IOCARIBE to:

- (i) Identify resources for the ODINCARSA Pilot Project;
- (ii) Submit the ODINCARSA project to international donors' for financial support.

Financial Implications:

US\$40,000 from IOC Regular Programme
US\$50,000 from extra budgetary sources

Recommendation SC-IOCARIBE-VIII.7

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

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

Noting with satisfaction the improvement and progress of the IBCCA project accomplished by the editorial board, as 90% of the sheets have been completed and that only two areas for compilation remain incomplete,

Instructs the IOC Secretary for IOCARIBE to send a formal letter encouraging the Representative of “Services Hydrographique et Océanographique de la Marine (SHOM)” of France to provide the required information needed to fulfil the missing coverage of the Caribbean Region;

Recognizing the significant work done by the Editorial Committee and the need for continuing upgrading of the bathymetric charts,

Instructs the IOC Secretary for IOCARIBE to seek support for an annual meeting of the IBCCA Editorial Committee.

Financial Implications: US\$10,000 from IOC Regular Programme
 US\$5,000 from extra budgetary sources

Recommendation SC-IOCARIBE-VIII.8

TSUNAMI WARNING SYSTEM

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

Being aware that it has been limited progress in the implementation of the Recommendation SC-IOCARIBE-VII.2 (Veracruz, February 2002),

Reaffirms the need to continue the development of Recommendation SC-IOCARIBE-VII.2;
and

Requests the Tsunami Regional Expert Group to prioritise education and mitigation issues in continuing its work.

Financial Implications: None

Recommendation SC-IOCARIBE-VIII.9

**CONTINUOUS DEVELOPMENT OF THE IOCARIBE-GOOS PROGRAMME
AND FOLLOW-UP SUPPORT FOR ITS STRATEGIC PLAN**

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

Recalling, Recommendation SC-IOCARIBE-VII.1 approved by the IOCARIBE Sub-Commission at its VII meeting held in Veracruz, Mexico, 25–28 February 2002, and the establishment of the IOCARIBE-GOOS Steering Committee,

Reiterating the need of a system of marine information, services and products to support sustainable social and economic development, welfare, and safety, through systematic observations and associated research on coasts and seas in the IOCARIBE region,

Recognizing, the work accomplished by the IOCARIBE-GOOS Steering Committee during the Intersessional period since Veracruz 2002,

Endorses the Report from the First Meeting of the IOCARIBE-GOOS Steering Committee, held in New Orleans, United States, 2–3 June 2003;

Further endorses a four-line approach to develop its Action Plan, **and decides** to support the Action Plan as described in Annex to this Recommendation;

Decides to prioritise the following activities considering its strategic importance in the implementation process:

- (i) Identify funding for a Technical Secretary for IOCARIBE-GOOS at the IOCARIBE Office in Cartagena;
- (ii) Establish better cooperation with regional programmes and organizations with complementary missions, e.g. GLOSS, GRASP, IODE, ODINCARSA, C-LME, HAB-ANCA, UNEP-CEP/CAR-RCU;
- (iii) Participate actively in the Pdf-b planning process of the Caribbean – Large Marine Ecosystem (LME) project;
- (iv) Implement an initial minimum IOCARIBE-GOOS observing system delivering real time sea level data and information to the region;
- (v) IOC Training, Education and Mutual Assistance in the Marine Science (TEMA)
- (vi) Support the proposed Memorandum of Understanding with SeaKeepers;
- (vii) Initiate preparatory work to develop in the region within the framework of IOCARIBE and in collaboration with UNEP-CAR-RCU the coastal and marine pollution module of GOOS;

Requests IOCARIBE Member States to continue supporting the development of national GOOS mechanisms and programmes, and their participation in the IOCARIBE-GOOS Regional Alliance;

Requests also the IOC Secretary for IOCARIBE to seek the necessary funds (both from the Regular IOC Programme and from extra-budgetary sources) to develop the Action Plan of the Steering Committee.

Financial Implications: US\$50,000 from IOC Regular Programme
US\$180,000 from Extra Budgetary sources

Annex to Recommendation SC-IOCARIBE-VIII.9

General Plan of Action for the Steering Committee for IOCARIBE-GOOS

ASSESSMENT

1. Carry out a survey among the marine-related communities of the participating IOCARIBE Member States (i) to construct an appropriate set of user scenarios, and (ii) to determine what end-products and services are required by the user community.
2. For selected cases, evaluate the costs and benefits of implementing IOCARIBE-GOOS for discrete user sectors (e.g. tourism, offshore industry, fishing).
3. Develop an inventory of existing activities relevant to IOCARIBE-GOOS including: (i) operational systems and programmes; (ii) organizations; (iii) scientific programmes; (iv) services and products; (v) commercial interests; and (vi) training and capacity building.

INITIAL OBSERVING SYSTEM

4. Establish an integrated Initial Observing System building on existing national and sub-national level observing systems.
5. Prepare an engineering and design analysis to integrate the various existing and planned ocean observations and provide for the future adaptability of the system.
6. Organize data management among the IOCARIBE-GOOS Initial Observing System elements, to improve data collection, storage, exchange and dissemination, building on existing structures, and exploiting the proposed Ocean Data and Information Network for the Caribbean and South America (ODINCARSA).
7. Identify key gaps in the existing observing systems, and make plans to fill them.
8. Develop and implement concept-demonstration projects that will contribute to the long-term health and stability of IOCARIBE-GOOS.

CAPACITY BUILDING

9. Establish an appropriate capacity building programme, building initially on existing and planned capacity building activities.
10. Encourage the development of National GOOS Co-ordinating Committees and appropriate national GOOS focal points in IOCARIBE Member States.

PROGRAMME CO-ORDINATION AND DEVELOPMENT

11. Devise an Implementation Plan that meets both the advice from the GOOS advisory panels and the needs of the region.

12. Take full advantage of the creation of JCOMM to bring together meteorologists and oceanographers to design IOCARIBE-GOOS in such a way as to extract the maximum benefit from JCOMM as an implementation mechanism for GOOS.
13. Work to ensure not only the effectiveness and efficiency of the observing system, but also its sustainability for the long term.
14. Ensure that GOOS design principles and principles of involvement are maintained within IOCARIBE-GOOS activities.
15. Develop appropriate synergies with global and programmes having activities in the region.
16. Hold a regional applications-oriented science conference (like the biennial Operational Oceanography conferences of EuroGOOS or the science conferences of the IOC Sub-Commission for the Western Pacific—WESTPAC), to bring the community together behind the development of IOCARIBE-GOOS including a regional workshop on concept-demonstration projects.
17. Develop the case for establishing and funding an Programme Officer to supply the Secretariat support required for implementing IOCARIBE-GOOS.
18. Solicit external funding from potential sponsors (with the secretariats of IOCARIBE and IOC) to implement aspects of the work programme.
19. Co-ordinate with the GOOS Steering Committee Advisory Panels on scientific and technical developments.
20. Develop appropriate marketing and communications strategies including a website and newsletter for IOCARIBE-GOOS.

Recommendation SC-IOCARIBE-VIII.10

**AN INTEGRATED REPORT OF IOCARIBE PROGRAMMES
AND PROJECTS ON CAPACITY BUILDING**

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

Considering the project-based approach of TEMA activities that IOCARIBE is applying for the development of the training, education and mutual assistance component in all its programmes and projects,

Recognizing the advances that have been achieved in programme and project implementation, including their activities for associated capacity building,

Noting the need to have an integrated report on capacity building and TEMA activities that could allow a general assessment of what has been done in this regard since the IOCARIBE VII meeting in Veracruz, 2002,

Being aware of the urgent need to define ways and means for national capacity building in terms of human resources, and its systematic evaluation in order to respond to the needs of the member states of the region,

Instructs the IOC Secretary for IOCARIBE to prepare an Integrated Assessment of all capacity building and TEMA activities done by the Sub-Commission programmes from IOCARIBE VII (Veracruz, 2002) to IOCARIBE VIII (Recife, 2004);

Decides that this Integrated Assessment on Capacity Building be prepared and distributed to all Member States before the end of 2004;

Establishes that the evaluations in this regard will be developed on the basis of this report of IOCARIBE programmes and projects on capacity building, starting at the next SC-IOCARIBE-IX (2006) Session;

Reiterates that all approved IOCARIBE programmes and projects will include a clearly defined plan and budget for training, education and mutual assistance activities, so as to ensure human resource capacity building in the region.

Financial Implications: None

Recommendation SC-IOCARIBE-VIII.11

MARINE SCIENCE IN LATIN AMERICA AND THE CARIBBEAN

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

Recalling the informal Latin America and Caribbean session on oceans, marine affairs and fisheries in Paris during the 22nd Session of the IOC Assembly, June 2003, and the informal session on marine science capacity building during the White Water to Blue water (WW2BW) Partnership Conference in Miami, USA, March 2004 where a draft programme was proposed and discussed,

Recognizing that the complexity of the marine area of Latin America and the Caribbean requires development of strategies and programmes that address the region as an integrated marine system as noted in the draft programme proposed at SC-IOCARIBE-VIII,

Noting the efforts of Member States to develop National Programmes of Action under the Cartagena Convention Protocol for the Protection of the Marine Environment from Land-Based Activities (LBS),

Further noting that CIDA has implemented a similar programme for the ASEAN countries, which was very successful; and that CIDA is willing to provide similar guidance and financial support to this programme,

Being aware of the urgent need to define ways and means for national capacity building in terms of marine environmental quality criteria, guidelines and standards that establish upper limits for the alteration of marine ecosystems by human activities,

Urges Member States of IOCARIBE Region to:

- (i) Approve in principle the proposed draft programme with its stated broad objectives and initial activities;
- (ii) Contribute actively to the further development of the proposed programme to ensure that the unique characteristics of the Latin America and Caribbean marine area are adequately addressed;

Instructs the IOC Secretary for IOCARIBE to:

- (i) Assist the programme coordinators in identifying marine environmental management, policy, institutional and capacity building needs of the region, and to offer assistance, where necessary, in completing the initial activities associated with the draft programme;
- (ii) Pursue the possibility of IOCARIBE Secretariat taking on the administrative leadership of the programmes and take relevant steps for organising a planning meeting.

Financial Implications: US\$50,000 from Extra budgetary sources

Recommendation SC-IOCARIBE VIII.12

ESTABLISHMENT OF A BIENNIAL SCIENTIFIC COMMEMORATIVE LECTURE

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

Considering the need to increase the awareness of decision makers and the public opinion on the importance of knowing the ocean and its resources, integrated management and environmentally sustainable development of the IOCARIBE region,

Taking into account the value of the ocean resources for the future of IOCARIBE Member States,

Acknowledging the need to incorporate all interested parties in the decision making process,

Recognizing the value of the scientific lectures organized by IOC in the framework of its Assembly;

Decides to establish a Commemorative Scientific Lecture of regional interest, in order to contribute to making the authorities and the public aware of the activities and results of the cooperative ocean investigations in the IOCARIBE region, beginning during the next SC-IOCARIBE-IX (2006) Session;

Asks Member States to propose to the IOCARIBE Secretariat a name for the Commemorative Lecture Series and the possible theme to be considered for IOCARIBE-IX (2006).

Financial Implications: None

Recommendation SC-IOCARIBE VIII.13

**STATUS OF COOPERATION WITH OTHER ORGANIZATIONS
COLLABORATION OF IOCARIBE WITH INTERNATIONAL MARITIME
ORGANIZATION (IMO)**

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

Recalling:

- (i) The global recognition of ballast water as an efficient vehicle for the transport of harmful algal blooms and invasive species,
- (ii) The inclusion of ballast water assessment in the work of the HAB-ANCA group,
- (iii) The signature of the final Act of the Conference on Ballast Water Management at the IMO in February 2004,
- (iv) The designation of the Caribbean Sea as a Special Area under the International Convention for the Prevention of Pollution from Ships (MARPOL),

Acknowledging:

- (i) That all IOCARIBE Member States are also members of IMO,
- (ii) The efforts made by the Marine Environmental Protection Committee (MEPC) of the IMO to protect marine and coastal ecosystems through global agreements,

Urges Member States to pursue methods of national collaboration between IMO Focal Points and IOCARIBE Focal Points with a view to fostering greater understanding of the IMO agreements which govern marine protection;

Instructs the IOC Secretary for IOCARIBE to explore areas of potential collaboration between the MEPC of IMO and Sub-Commission to accelerate the fulfillment of marine protection goals for the Caribbean Sea.

Financial Implications: None

Recommendation SC-IOCARIBE-VIII.14

PROGRAMME AND BUDGET FOR 2006–2007

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 2004–2005,

Noting with appreciation the effective work done by the IOCARIBE Secretariat in developing the regional programmes and activities under the present financial restrictions,

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

Noting with concern that the regular biennial budget approved for the Sub-Commission shows a real decreasing trend during the last 10 years,

Emphasizing the need to prepare a timely biennial programme and budget in tandem with the processes inside IOC and UNESCO, that allows better and effective support from both IOC/UNESCO Regular Budget and also from contributions from other sources,

Instructs the IOC Secretary for IOCARIBE to prepare the biennial 2006–2007 IOCARIBE Draft Programme and Budget, in coordination with all Project Coordinators;

Instructs also the IOC Secretary for IOCARIBE to distribute the biennial 2006–2007 IOCARIBE Draft Programme and Budget among all national focal points for their consideration;

Decides to establish a two-month period to collect the opinions and considerations of all Sub-Commission's Member States, with the purpose to prepare a proper consultation with the Officials of the Sub-Commission, for their consideration and final approval during their regular meeting before the end of 2004;

Instructs the IOC Secretary for IOCARIBE to submit to the IOC Executive Secretary the approved biennial 2006–2007 IOCARIBE Programme and Budget, and to distribute it to all IOCARIBE Member States.

Financial Implications: None

ANNEX III

LIST OF PARTICIPANTS/LISTA DE PARTICIPANTES

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ANNEX IV

LIST OF DOCUMENTS

WORKING DOCUMENTS

Document code	Title	Agenda item	Language
IOC/SC-IOCARIBE-VIII/1 Prov.	Provisional Agenda	2.1	E, S
IOC/SC-IOCARIBE-VIII/1 Add. Prov.	Provisional Timetable	2.3	E/S
IOC/SC-IOCARIBE-VIII/2	Action Paper	2.1	E
IOC/SC-IOCARIBE-VIII/2 Annex 1	Report by the IOCARIBE-UNESCO Secretary on Programme Implementation	3.	E
IOC/SC-IOCARIBE-VIII/2 Annex 2	Progress Report on Budget Execution	3.1	E
IOC/SC-IOCARIBE-VIII/3 Prov.	Summary Report	9.	E, S
IOC/SC-IOCARIBE-VIII/4 Prov.	Provisional List of Documents (this document)	2.3	E
IOC/SC-IOCARIBE-VIII/5 Prov.	Provisional List of Participants	2.3	E/S
IOC/SC-IOCARIBE-VIII/6 Prov.	Framework of the IOCARIBE Strategic Science Plan and Related Services for IOCARIBE 2001-2010	4.1	E

INFORMATION DOCUMENTS

Document code	Title	Agenda item	Language
IOC/SC-IOCARIBE-VIII/Inf 1.	Information and Guidelines to participants	2.3	E, S
IOC/SC-IOCARIBE-VIII/Inf. 2	List of IOCARIBE National Focal Points	--	E/S
IOC/SC-IOCARIBE-VIII/Inf. 3	IOCARIBE Manual	--	E

OTHER REFERENCE DOCUMENTS

Document code	Title	Agenda item	Language
IOC/SC-IOCARIBE-VII/3	Seventh Session of the IOC Sub-Commission for the Caribbean and Adjacent Regions (Veracruz, Mexico, 25–28 February 2002)	--	E, S
IOC/INF-1043	Report on IOCARIBE Evaluation	--	E/S
IOC/INF-1130	The IOCARIBE Medium Term Strategy: 1999–2003	--	E
IOC/INF-1170	The Strategic Plan for IOCARIBE-GOOS	5.3.1	E
IOC/SC-IOCARIBE/OFFICERS 2002–01	Board of Officers of IOCARIBE (Cartagena, 31 October– 1 November 2002)	3.	E
IOC Technical Series No. 41	Marine Debris: Solid Waste Management Action Plan for the Wider Caribbean	--	E

OTHER REFERENCE DOCUMENTS

Document code	Title	Agenda item	Language
IOC/EC-XXXV/3	XXXVth Session of the IOC Executive Council (Paris, 4–14 June 2002)	3.1	E
Training Course Report No. 66	First ODINCARSA Training Course on Marine Information Management (Mazatlan, Mexico, 30 September–5 October 2002)	5.2.2	E
---	IAS RODAE IOCARIBE-GOOS Modelling Workshop (Barbados, 6–8 November 2002)	5.3.1	E
Training Course Report No. 75	Second ODINCARSA Training Course on Marine Data Management (Cartagena, Colombia, 13–17 October 2003)	5.2.2	E
IOC GOOS Report No. 127	IOCARIBE-GOOS First Regional Forum (Athens, Greece, 2–6 December 2002) EUROGOOS	5.3.1	E
IOCARIBE INFORMATION DOCUMENT	White Water to Blue Water Initiative (WW2BW)	5.1.4	E
---	Editors Training Course for UNESCO/IOC Regional OCEANPORTAL (Guayaquil, Ecuador, 19–21 February 2003)	5.2.1	E
IOC Workshop Report No.	9th Editorial Board Meeting for the International Bathymetric Chart of the Caribbean and the Gulf of Mexico IBCCA (Boulder, Colorado, USA, 3–7 March 2003)	5.2.3	E
---	Tenth Session of the Joint Working Group IOC-WMO-CPPS Joint Working Group on the Investigations of “El Niño” (Cartagena, 28-29 May 2003)	--	E/S
GOOS Report No. 134	Meeting for Establishing the GOOS Regional Alliance for the Southeast Pacific (GRASP) (Cartagena, 30–31 May 2003)	5.3.2	E/S
GOOS Report No. 135	First Meeting of the IOCARIBE-GOOS Steering Committee (New Orleans, USA, 2–3 June 2003)	5.3.1	E/S
GOOS Report No.	Second IOCARIBE-GOOS Conference (New Orleans, 4 June 2003)	5.3.1	E
IOCARIBE INFORMATION DOCUMENT	Third Meeting of the IOCARIBE HAB-ANCA Group of Experts (Cumaná, Venezuela, 16–18 July 2003)	5.1.3	E/S
IOC Workshop Report No.189	Meeting on Integrated Coastal Zone Management ICZM (IOC-CEPAL-GTZ) (Cartagena, Colombia, 23–25 October 2003)	5.1.5	E/S

OTHER REFERENCE DOCUMENTS

Document code	Title	Agenda item	Language
IOCARIBE/CLME PDF-B	Sustainable Management of the Shared Living Marine Resources of the Caribbean Large Marine Ecosystem (CLME) and Adjacent Regions PDF-B Proposal	5.1.1	E
IOC-XXII/2 Annex 7	Feasibility of Establishing a Regular Process for the Assessment of the State of the Marine Environment	7.3	E
IOC/IODE-XVII/35	Strategic Plan for Oceanographic data and Information Management		
IOC-XXII/3 prov.	Twenty-second Session of the Assembly (Paris, 24 June – 4 July, 2003) — Draft Summary Report	--	E

ANNEX V

MARINE SCIENCE IN LATIN AMERICA AND THE CARIBBEAN

IOCARIBE –IOC Subcommittee for Caribbean and Adjacent Regions, The Intergovernmental Oceanographic Commission (IOC of UNESCO) and the Canadian International Development Agency (CIDA) of Canada.

PROJECT PROPOSAL

Subject: Marine Science in Latin America and the Caribbean

The marine environment of Latin America and Caribbean (LAC) countries, oceans and seas, coastal areas including estuaries, bays and valued ecosystems (e.g., coral reefs, seagrass beds, mangroves areas) is important, in terms of beneficial uses such as: ports and shipping, tourism, mariculture /aquaculture, commercial and recreational fisheries, ecology and conservation. Coastal and ocean environments throughout the world have been presumed to possess the capacity to absorb and disperse anthropogenic wastes (e.g., human, agriculture, dredging, mining, petrochemical and industrial waste materials). From many reports, it is apparent that in many locations, the capacity of these environments to accommodate these wastes has been overestimated (UNEP. 2001) and the impact of land-based sources of pollution and resource over-exploitation are in fact very substantial. The result has been a significant loss of economic and social benefits that oceans, seas and coastal areas could have otherwise provided.

The marine area of LAC member states provides a compelling argument for the development of strategies and programmes, which address the region as an integrated marine system. LAC countries are at varying stages of development with respect to marine scientific, technical, institutional and management capacity and have a wide range of related needs. The human and institutional resources to address the scope of these common needs within LAC require regional cooperation. Moreover, potential for trans-boundary contamination carried by oceanographic currents, and other common issues underscores the need for hemispheric cooperation.

Marine environmental quality criteria are an important component in the management of marine resources and functions. To address the problem of maintaining viable marine environments within the context of development/industrialization, many coastal and Island states have undertaken the development of Marine Environmental Quality guidelines, criteria, and/or standards that limit the extent to which marine environments can be altered by human activities without affecting beneficial uses.

In some LAC countries harmful algal blooms, nourished especially by sewage and agriculture run-off, are becoming increasingly common, adversely affecting the recreational values of many coastal areas and in some cases producing toxic blooms or producing anoxia in the water column, impacting on fish production (in particular rural small-scale fisheries). The problem now confronting LAC member states, is that coastal and marine ecosystems are not being well-managed, and are currently being used in ways that are unsustainable, not only in environmental but also in economic and social terms.

As a follow-up to the informal Latin America and Caribbean session on oceans, marine affairs and fisheries in Paris during the 22nd Session of the IOC Assembly June, 2003, and with the collaboration of IOCARIBE and during the White Water to Blue Water (WW2BW) Conference Miami, USA, March 2004, this discussion paper was developed as a first step in the process of

identifying a LAC Hemispheric Marine Environmental Criteria Capacity Building Programme. Based on the above, LAC marine scientific and technical officials are asked for input into this discussion paper that will form the basis for a more formal session to develop terms of reference for a programme identification activity.

Proposed Programme Title: LAC Marine Environmental Capacity Development

Goal: Improve the state of the marine environment in Latin America and Caribbean (LAC) regions

Purpose: To upgrade LAC marine science environmental management capacity

Objectives:

- A. To identify common problems and current constraints in coastal and marine environmental management;
- B. To identify marine environmental management, policy, institutional and capacity development needs of the LAC region;
- C. To identify training, technical assistance, marine environmental criteria, sources of land-based pollution, toxicity testing, marine environmental information development and equipment needs in the LAC region;
- D. To identify potential LAC coastal and marine environmental science and technical constituencies to take on leadership of the proposal.

Activities:

1. Acquire consensus/agreement on goal, purpose and objectives of proposal;
2. Identify key technical LAC coastal and marine environmental science constituents (scientists, consultants, academics, government agencies, universities, private sector research organizations, intergovernmental laboratories);
3. Indicate coastal and marine science policy, institutional and capacity building needs in the LAC programme area;
4. Delimit the LAC marine science programme area;
5. Identify type of training most appropriate for LAC marine scientific and technical community;
6. Develop tentative budget and time-frame for realization of programme purpose;
7. Identify appropriate management structure for programme implementation;
8. Identify existing electronic network/s that could be linked to this proposal;
9. Indicate marine environmental quality criteria, toxicity testing and baseline studies needed in the LAC region;
10. Indicate access to international literature and peer exchange;
11. Identify opportunities for coordination and cooperation among LAC marine scientists in the region.

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ANNEX VI

LIST OF ACRONYMS AND ABBREVIATIONS

CARICOMP	Caribbean Coastal Marine Productivity
CARICOM	Caribbean Community
CARSA DIR	Regional Directory of Experts
CDP	Concept Development Projects
CRFM	Caribbean Regional Fisheries Mechanism
CICESE	Centro de Investigación Científica y de Educación Superior de Ensenada
CIDA	Centro de Investigación Científica y de Educación Superior de Ensenada
CIOH	Centro de Investigaciones Oceanográficas e Hidrográficas
CLME	Caribbean Large Marine Ecosystem
CPACC	Caribbean Planning for Adaptation to Climate Change
GEF	Global Environmental Facility
GMA	Global Assessment of the State of the Marine Environment
GMA	Global Assessment of the State of the Marine Environment
GODAE	Global Ocean Data Assimilation Experiment
GOOS	Global Ocean Observing System
GOOS-COOP	GOOS Coastal Ocean Observations Panel
GRASP	GOOS Regional Alliance for the South East Pacific
HAB-ANCA	Harmful Algal Blooms for the Caribbean
IAS	Intra Americas Sea Initiative
IBCCA	International Bathymetric Chart for the Caribbean and the Gulf of Mexico
ICAM	Integrated Coastal Area Management
ICAM-LAC	Integrated Coastal Area Management for Latin America and the Caribbean
ICM	Integrated Coastal Management
I-GOOS	Intergovernmental Committee for GOOS
IMO	International Maritime Organization
INIA	Instituto Nacional de Investigaciones Agrícolas (Cumaná)
IOC	Intergovernmental Oceanographic Commission
IOCARIBE	IOC Sub-Commission for the Caribbean and Adjacent Regions
IODE	Oceanographic Data and Information Exchange
ITSU	International Coordination Group for the Tsunami Warning System in the Pacific (IOC)
JCOMM	Joint Technical Commission for Oceanography and Marine Meteorology

LME	Large Marine Ecosystems
MARPOL	Marine Pollution
MEPC	Marine Environmental Protection Committee
MIM	Marine Information Management
NGOs	Non-Governmental Organizations
NOAA	National Oceanic and Atmospheric Administration
NODC's	National Oceanographic Data Centres
OAS	Organization of American States
ODINCARSA	Ocean Data and Information Network for the IOCARIBE and South America Regions
OECS	Organization of Eastern Caribbean States
OES	Bureau of Oceans and International Environmental and Scientific Affairs (US Department of State)
PCA	Pacific Central America
PSP	Paralytic Shellfish Poisoning
PTWS	Pacific Tsunami Warning System (ICG/PTWS: Intergovernmental Coordinating Group of the)
RODAE	Regional Ocean Data Assimilation Experiment
RPC	Regional Project Coordinator
SHOM	Services Hydrographique et Océanographique de la Marine (France)
SOP	Standard Operative Procedure
TEMA	Training, Education and Mutual Assistance
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UNIDO	United Nations Industrial Development Organization
USVI	University of the Virgin Islands
WESTPAC	IOC Sub-Commission for the Western Pacific
WMO	World Meteorological Organization
WSSD	World Summit on Sustainable Development
WW2BW	White Water to Blue Water Initiative

In this Series	Languages
Reports of Governing and Major Subsidiary Bodies , 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*