



IOC/INF-1281
Paris, 18 June 2011
Original: English

INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

INFORMATION DOCUMENT

STATUS REPORT ON IOC REGIONAL ACTIVITIES

Summary. The IOC's Regional Subsidiary Bodies play an important role in the implementation of the Commission's programmes in the regions. These efforts are complemented by other IOC decentralized offices, and regional networks established by the IOC's global programmes.

The report provides an overview of the status of IOC Regional Activities.

Introduction

1. The IOC has a long tradition of implementing regional programmes and regional components of its global programmes through Regional Subsidiary Bodies and IOC Decentralized Offices. These can be classified into the following categories:

- (i) Regional Sub Commissions
- (ii) Regional Committees
- (iii) Programme and Project Offices

2. IOC also has a network of UNESCO Chairs that contribute to its capacity development programmes.

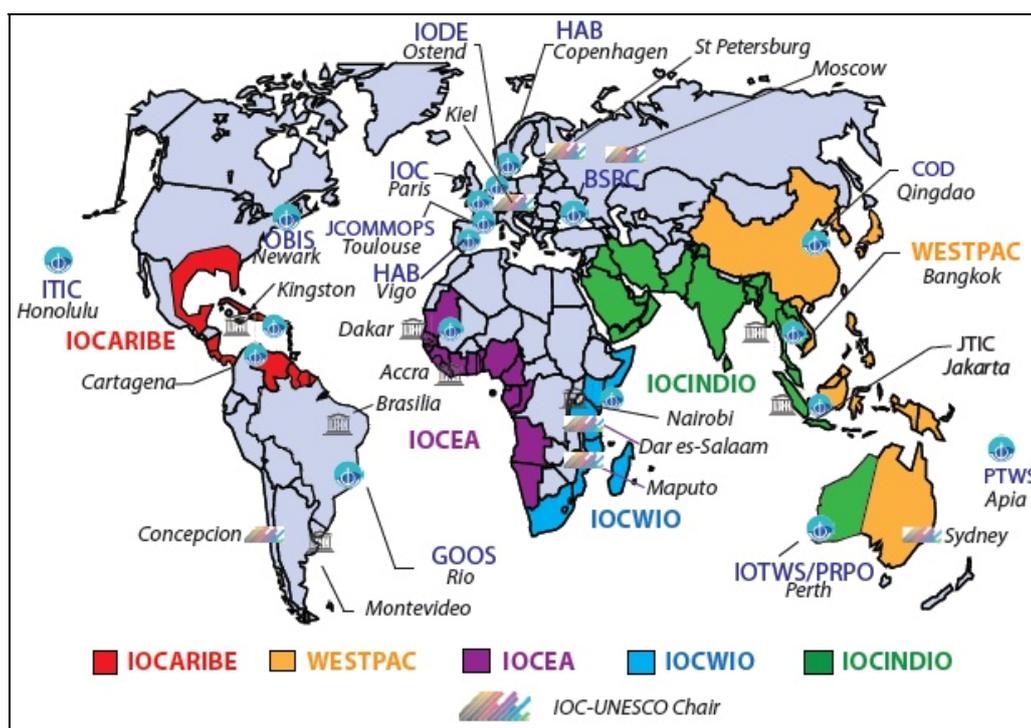


Figure 1 – IOC Network (note that South Africa is in both IOCEA & IOCWIO, Indonesia, Malaysia and Thailand are in both WESTPAC & IOCINDIO, while Russia is in both WESTPAC & BSRC)

Sub-Commissions

3. Regional Sub-Commissions are intergovernmental subsidiary bodies of the Commission, responsible for the promotion, development and co-ordination of the Commission's marine scientific research programmes, the ocean services, the ocean operational observing systems and related activities, including capacity development (formerly Training, Education and Mutual Assistance – TEMA), in their respective regions through the concerted action of their Member States. They are established by the IOC Governing Bodies at the request of Member States in the regions taking into account their specific interests and needs and operate within the framework of the general policy of the Commission and the budgetary guidelines and allocation established by the Assembly.

- IOC Sub-Commission for the Caribbean and Adjacent Regions—IOCARIBE (established in 1982, to replace the Regional Committee for IOCARIBE that was created in 1975). Secretariat in Cartagena, Colombia

- IOC Sub-Commission for the Western Pacific - WESTPAC (established in 1989, to replace the Regional Committee for WESTPAC that was created in 1977). Secretariat in Bangkok, Thailand.

Regional Committees

4. Regional Committees are intergovernmental subsidiary bodies of the Commission, responsible for the co-ordination and supervision of the scientific and service activities of the Commission at the regional level. They are expected to take decisions and act as necessary to give effect to the Commission's policy decisions through the concerted action of their Member States, within their Terms of Reference and allocated budgets, and make recommendations to the governing bodies of the Commission on policy matters within their Terms of Reference and on future actions required.

- Regional Committee for the Western Indian Ocean - IOCWIO (established in 1979)
- Regional Committee for the Central Indian Ocean - IOCINDIO (established in 1982)
- Regional Committee for the Central Eastern Atlantic - IOCEA (established in 1984)
- Black Sea Regional Committee - BSRC (established in 1995)

Decentralized Offices

5. These include Programme Offices established to assist in the implementation of an IOC Programme (an activity with a long-term strategy and objectives), and Project Offices established to assist in the implementation of projects (an activity with specific objectives, clearly defined deliverables and pre-determined duration):

- GOOS Office (Rio de Janeiro, Brazil)
- Regional Programme Office (Perth, Australia)
- IODE (Ostend, Belgium; and proposed for OBIS in Newark, USA)
- HAB: IOC Science and Communication Centres on HAB (Programme Office Copenhagen, Denmark; Project Office Vigo, Spain)
- Tsunami (Honolulu, USA; Perth, Australia; Jakarta, Indonesia)
- ICAM (Dakar, Senegal for ACCC)
- JCOMMOPS (Toulouse, France)

UNESCO Chairs

6. To address the capacity-building goals of the IOC Programme, a network of UNESCO/IOC Chairs has been progressively established in domains ranging from Marine Science Focused on Integrated Coastal Management (in Mozambique) and Marine Geosciences (in Russia), to Physical Oceanography (in Chile and Georgia). In their work the Chairs apply innovative approaches that include among others the training-through-research scheme combining formal education with field research and on-the-job training. Students involved in field projects participate in the processing and analysis of data as visiting scholars and write up results as professional contributions to the advancement of marine science. The Chairs mobilize important extra-budgetary resources and develop bilateral and multilateral co-operation to support their daily work and widen the involvement of students in studies well recognized as national priorities.

7. The IOC considers the establishment of a few other Chairs in well focused domains, such as remote sensing in oceanography and ocean modeling, which would strengthen key capacity building needed for the successful implementation of the IOC programme in developing countries

and provide the Member States with trained personnel in disciplines in which they are particularly weak today but which represent important avenues in ocean research and its practical applications tomorrow.

8. The following UNESCO Chairs are associated with the IOC:

- UNESCO/IOC Chair in Oceanography and Coastal Management, University of Concepcion, Chile
- UNESCO/IOC Chair in Marine Sciences and Oceanography, Eduardo Mondlane University, Mozambique
- UNESCO/IOC Chair in Marine Geology and Geophysics, Moscow State University, Russian Federation
- UNESCO/IOC Chair in Remote Sensing and Modeling in Oceanography, RSHU, St Petersburg, Russian Federation
- UNESCO/IOC Chair in Marine Technology, University of Dar es Salaam, United Republic of Tanzania
- UNESCO/IOC Chair in Marine Geology and Coastal Management, Kiel, Germany (re-orientation of the areas of collaboration of the Chair is under consideration between IOC and the University of Kiel)
- UNITWIN Cooperation Programme in Marine Biology and Sustainable Development For East Africa

Regional Training and Research Centre

9. A Regional Training and Research Centre was established in Qingdao, China in May 2010.

REGIONAL SUBSIDIARY BODIES

Sub-Commission for the Caribbean and Adjacent Regions IOCARIBE (1982)

10. The IOC's Association for the Caribbean and Adjacent Regions (IOCARIBE) was established in 1975 to take over the functions of Cooperative Investigations in the Caribbean and Adjacent Regions (CICAR), which was coordinated by IOC and modeled on the International Indian Ocean Expedition. The IOC Sub-Commission for the Caribbean and Adjacent Regions (IOCARIBE), which replaced the association, but retained the acronym, was created in 1982, to carry out the IOC global programmes on a regional basis for the Greater Caribbean. This was the first Sub Commission established by IOC.

11. Membership: Antigua & Barbuda, Bahamas, Barbados, Belize, Brazil, Colombia, Costa Rica, Cuba, Dominica, Dominican Republic, France (French Guyana, Guadeloupe, Martinique, St. Barthelemy, St. Martin), Grenade, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Netherlands (Aruba, Bonaire, Curacao, Saba, St. Eustasius, St. Maartin), Nicaragua, Panama, St. Kitts & Nevis, St. Lucia, St. Vincent & Grenadines, Suriname, Trinidad & Tobago, United Kingdom (Anguilla, Bermuda, British Virgin Islands, Cayman Islands, Turks & Caicos), United States (Puerto Rico, US Virgin Islands), Venezuela.

12. The Sub Commission has a secretariat in Cartagena, Colombia.

13. The following are high lights of some of the activities implemented in recent years:

- The eleventh session of the IOC of UNESCO Sub-Commission for the Caribbean and Adjacent Regions SC-IOCARIBE-XI was held in Miami, USA, 17-20 May 2011. It was

attended by 30 participants from nine countries of the Caribbean Region and two Organizations. The Session reviewed progress made during the Inter-sessional period 2009–2011. The Sub Commission adopted seven recommendations concerning: (i) Programme Implementation; (ii) IOC Working Group on Harmful Algal Blooms in the Caribbean and Adjacent Regions (HAB-ANCA); (iii) The Regular Process for the Global Reporting and Assessment of the State of the Marine Environment, including socioeconomic aspects (Regular Process); (iv) Ocean Data and Information Network for the Caribbean and South American Regions (ODINCARSA-LA) and the Caribbean Marine Atlas Project (CMA); (v) The International Bathymetric Chart for the Caribbean Sea and the Gulf of Mexico (IBCCA); (vi) IOCARIBE-GOOS; and, Programme and Budget for 2012-2013. A new Board of Officers for the IOCARIBE Sub-Commission was elected for the period 2011–2013. Dr. Bonnie Ponwith (United States) was elected as Chairperson, Mr. Anthony McKenzie (Jamaica) was re-elected as Vice-Chairperson, Ms. Pedzi Girigori (Curacao) and Mr. Francisco Brizuela-Venegas (Mexico) were elected as Vice-chairpersons.

- Appointment of Head of IOCARIBE to a permanent UNESCO position, consolidated with UNESCO Science Programme Officer for the Caribbean based at the UNESCO Regional Office in Kingston, Jamaica in January 2009.
- Implementation of the CLME Project. It has a total budget of 56 USD million; comprising 7.2 USD million in GEF funding and 48.8 USD million in cash plus in-kind support by government and multilateral donor agencies. The Project Coordinating Unit (PCU) was established in the offices of the IOCCARIBE Secretariat in May 2009. UNDP is the implementing agency, UNOPS is in charge of administrative aspects of the project and the IOC, through IOCARIBE, is the lead technical agency.
- The meeting of Project Advisory Group (PAG) and the 2nd CLME Steering Committee meetings were held in Panamá from 16th to-18th of November, 2010. During the SC meeting the role of the National Focal Points and the identification of possible national committees involving high level decision makers and Stakeholders in the CLME Strategic Action Programme was discussed. In a preliminary survey among 19 countries that were present at the meeting, 15 of them had already identified possible National Committees suitable for this purpose. Important milestones of the project were also defined such as the timeframe for the Transboundary Diagnosis Analysis that should be ready in the first quarter of 2011 and the Strategic Action Programme by December 2012.
- The ICAM Project *Demonstrate Approaches for Nutrient and Sediment Reduction at Selected Pilot Study Areas in the Wider Caribbean Region* has focused on examining the effectiveness of best management practices in the watersheds of four member countries (Dominican Republic, Dominica, Grenada, and Trinidad and Tobago). The project is in its PDF-A phase and that the United Nations Development Programme (UNDP) has been designated to act as the Implementing Agency for the Project and the IOC Sub-Commission for the Caribbean and Adjacent Regions IOCARIBE is the Leading Technical Agency.
- With the purpose of updating the ICAM management plan for the English speaking Caribbean SIDS; a Workshop was convened by IOC UNESCO in cooperation with the Barbados Coastal Zone Management Unit (CZMU). The Caribbean Regional Workshop on ICAM for the English Speaking Caribbean States was held in Bridgetown, Barbados, March 16 – 18, 2011. The meeting was attended by 22 participants representing Antigua & Barbuda, Barbados, Curacao, Grenada, Guyana, Jamaica, Saint Lucia and Trinidad & Tobago. The main objective of the meeting was to assist Member States in building the resilience of SIDS economies mainly dependant on coastal tourism using knowledge and expertise of the CZMU of Barbados for developing their own capacity to manage coastal areas. The group agreed to complete a 10-year project document with a 5 year

Implementation Plan to be coordinated jointly with the Intergovernmental Oceanographic Commission (IOC).

- The Sub Commission was involved in the CARIBE Wave 2011 and LANTEX 2011 exercise in the Western Atlantic, Caribbean and Adjacent Regions held March 23, 2011. The purpose of the exercise was to test the communications systems between the warning centers and the officially designated Tsunami Warning Focal Point (TWFP). Thirty-four countries and territories of the Caribbean participated in the first regional tsunami exercise, CARIBE WAVE 2011 which was held jointly with LANTEX and was conducted under the framework of the UNESCO IOC Intergovernmental Coordination Group for the Tsunami and Other Coastal Hazards Warning System for the Caribbean and Adjacent Regions (ICG CARIBE EWS).
- A Sub-regional Planning meeting for ODINCARSA was held in the Universidad Autonoma de Baja California (UABC), Ensenada, December 7- 10, 2009. During the meeting the ODINCARSA Regional Project Coordinator for ODINCARSA was selected to replace Mr. Rodney Martinez who acted as Coordinator during 2001-2009. The meeting designated Mr Ariel Troisi from Argentina as ODINCARSA Regional Coordinator for Data Management for a period of two years.
- The tenth session of the Editorial Board meeting for the Bathymetric Chart of the Caribbean and the Gulf of Mexico IBCCA was held in La Habana, Cuba, 13 February, 2009. The meeting was attended by members of the Editorial Board and a representative from the International Hydrographic Bureau of Monaco. During the meeting progress reports were presented from Colombia, Costa Rica, Cuba, Mexico, Venezuela and USA. It was agreed that Colombia will remain on the Chairmanship of the IBCCA Editorial Board for another period and the INEGI will continue to be the leading editorial institution for the compilation of the chart. The Action Plan was also reviewed.
- An IOCARIBE-GOOS Strategic Planning Meeting was convened in San Juan, Puerto Rico, March 7 – 8, 2011. The meeting was attended by 14 participants from 7 countries of the IOCARIBE Region. The meeting updated the IOCARIBE-GOOS governance component and decided the creation of an IOCARIBE GOOS Working Group composed of nominated state representatives with the possibility of inclusion of additional experts at discretion of the IOCARIBE GOOS Officers. The meeting discussed the new Terms of Reference for the working group. The meeting recommended developing a six year Implementation Plan that meets both the advice from the GOOS Advisory Panels and the needs of the region. It also was agreed the establishment of National GOOS Committees for the IOCARIBE Region. The role of the IOCARIBE-GOOS Steering Committee to be assumed by the IOC Sub-Commission for the Caribbean and Adjacent Regions IOCARIBE.
- The planning meeting was organized in conjunction with the Third Regional Workshop in the Workshop Series of the GEO Coastal Zone Community of Practice (CZCP) held at the same venue from 9 - 11 March 2011. The Workshop focused on specific needs, challenges and capabilities related to sustainable tourism of SIDS in the Caribbean and was organized in partnership with the Caribbean Regional Association (CaRA) for the Caribbean Integrated Coastal Ocean Observing System (CarlCOOS), the Global Ocean Observing System (GOOS), the Global Terrestrial Observing System (GTOS), the United Nation Educational, Scientific, and Cultural Organization (UNESCO), and the Intergovernmental Oceanographic Commission (IOC).

Sub-Commission for the Western Pacific – WESTPAC (1989)

14. The IOC Sub Commission for the Western Pacific was established in 1989, and replaced the IOC Regional Committee for the Western Pacific, which had been in existence since 1977. This was the second Sub Commission to be established by IOC.

15. WESTPAC currently has 20 member states: Australia, China, Democratic People's Republic of Korea, Fiji, France, Indonesia, Japan, Malaysia, New Zealand, Philippines, Republic of Korea, Russia, Samoa, Singapore, Solomon Islands, Thailand, Tonga, UK, USA and Vietnam. The Government of Thailand has hosted the WESTPAC Secretariat since its establishment in 1994.

16. The following are high lights of some of the activities implemented in recent years:

- Creation of Head of WESTPAC as a UNESCO position, based at the UNESCO Asia-Pacific Bureau for Education in Bangkok, Thailand
- Development of the Regional Ocean Research Priority Plan, aiming to identify the most compelling regional ocean-related issues, present possible research priorities and provide a framework for regional research investment in ocean science.
- Developing two regional ocean observing systems, i.e. *North East Asian Global Ocean Observing System (NEAR-GOOS)* and *South East Asian Global Ocean Observing System (SEAGOOS)*: i) NEAR-GOOS has been efficiently operating with the real time and delayed-mode transmission of ocean observation data, and provision of related data products and services to the public users; ii) SEAGOOS was substantially promoted through the initiation of pilot projects which aim to demonstrate the value of observations to the general public in the SEAGOOS region. The pilot project "*Monsoon Onsets Monitoring over Andaman Sea and its Social & Ecosystem Impact (MOMSEI)*" was launched in 2009. This project aims to improve the understanding and forecasting of Asian monsoon events at a regional scale through the development and implementation of air-sea observations over the Andaman Sea and through the study of the preconditioning role that the ocean has in the onset of monsoon events. MOMSEI has organized four planning meeting during 2009-2010, carried out first MOMSEI cruise in the Andaman Sea, 20-26 November 2010 and organized the MOMSEI Summer School in Qingdao, China, 26-30 July 2010, SEAGOOS is also developing another pilot project "*Ocean Forecast Demonstration*" intended to develop an ocean forecast system to provide products and applications for the South East Asia Seas through the utilization and comparison of a wave-tide-circulation coupled model (MASNUM), or other global ocean forecasting systems in the region.
- Conduct of marine scientific research to improve the knowledge on the role of ocean in climate change and variability, and safeguard the health of ocean ecosystems, specifically on: i) "*Response of Marine Hazards to Climate Change*", through the organization of joint cruises in June 2009 and October 2010 in typhoon generation area with data sharing among all participating members; ii) *Marine Non-indigenous Species* through the publication of the Regional Status of Marine Non-indigenous Species, posters and conduct of three regional training workshops on Rapid Assessment Techniques for Detecting Marine Non-Indigenous Species, 20-21 September, 6-9 December, 2010 and 19-21 July 2011; iii) *Investigation of fluvial sediment sources, transport and discharge to the South China Sea* through fieldwork, joint cruise and scientific visits; iv) *the biogeochemistry and ecological nature of coral reefs* through the evaluation of current coral status in different physical and environmental settings, Phuket, Thailand, 22-24 June 2010 and conduct of two training courses, respectively on Sedimentary Impact on Coral Reef, 15-18 June 2010 and the impact of water quality on coral reef, 8-11 June 2011 v) *harmful algae bloom*, and conduct of a series of trainings with the recent one on *Pseudo-nitzschia*, 20-23 March 2011; vi) *application of remote sensing for coastal habitat mapping*.
- Endorsement of three new WESTPAC projects: *Ocean Forecast Demonstration System* aiming to provide ocean forecast products; *DNA Taxonomy and Recruitment Monitoring of the Coral Reef Organisms* to investigate the extent of marine biodiversity and its dynamics with a genetic tool called DNA bar coding; and *Toxic Marine Organisms* to identify natural marine biotoxins and disseminate scientific information to the general public.

- Initiation of WESTPAC Working Groups, which aims to engage leading scientists to deliberate on specifically, focused scientific topics or regional/international emerging issues, which largely require marine scientific inputs. Two working groups focused on the topics of *Asian Dust and its Impact on Ocean Ecosystem in the Western Pacific (WESTPAC-ADOES)*, and *Regular Process for Global Reporting and Assessment of the State of the Marine Environment (WESTPAC-GRAME)* in Bali, Indonesia, 10-13 May 2010;
- Strengthening the regional capacity sustainably and systematically through the materialization of UNESCO/IOC Regional Network of Training and Research Centres on Oceanography: the first IOC Regional Training & Research Center, with focus on ocean dynamics and climate, has been officially established in Qingdao, China on 11 May 2010 and inaugurated on 9 June 2011. The first training on Ocean Models has taken place on 10-16 June 2011 with 10 leading world ocean modelers invited as lecturers and 69 trainees participating in from 10 countries in the region.
- WESTPAC has been making great contributions to the IOC's 50th Anniversary year by demonstrating the value, enhancing political and public awareness of the Intergovernmental Oceanographic Commission in the Western Pacific through the conduct of a series of programmes in alignment with the IOC's High Level Objectives. Notably, the recent 8th IOC/WESTPAC International Scientific Symposium has been successfully organized in Busan, Korea, 28-31 March 2011 with the attendance of around 500 participants, which, among others, has demonstrated the unique role of the IOC/WESTPAC Symposium in serving as the largest regional platform for marine scientists to share their knowledge and stimulate new ideas for further collaboration and cooperation.

Regional Committee for the Western Indian Ocean – IOCWIO (1979)

17. The IOC Regional Committee for the Western Indian Ocean was established in 1979 as the Regional Committee for the North and Central Western Indian Ocean (IOCINCWIO). The name was changed to IOCWIO in 2003.

18. Membership: Comoros, France, Kenya, Madagascar, Mauritius, Mozambique, Seychelles, [Somalia], South Africa, and Tanzania.

19. The IOC Project Office for IOCWIO was established at the Kenya Marine & Fisheries Research Institute, Mombasa, Kenya in 2000, and later re-located to the UNESCO Regional Office in Nairobi, Kenya in 2004. The Office ceased to operate in 2009 after the coordination of the Ocean Data and Information Network for Africa – ODINAFRICA was moved to the IOC Project Office for IODE and the SIDA funded Capacity Development programme ended.

20. There is now no secretariat support for IOCWIO. The ODINAFRICA Coordinator assists with this 10% of his time.

21. The following are high lights of some of the activities implemented in recent years:

- The proposal for a fourth phase of ODINAFRICA, which was developed at a review and planning meeting held during the seventh session of IOCWIO was submitted to the Flanders UNESCO Science Trust fund (FUST). The project was approved and USD3.545 million provided for implementation in the period 2009 – 2013. The focus of this phase will be on the application of data, information and products to integrated coastal management. Experts from ODINAFRICA-IV institutions participated in Ocean Teacher Academy training courses to improve their skills in various aspects of marine data and information management. Good progress was made in the development of the Coastal and Marine Atlases, with four training courses held in May 2010 (Oostende, Belgium), July/August 2010 (Mombasa, Kenya), November 2010 (Oostende, Belgium)

and February 2011 (Oostende, Belgium). National Atlas teams were established in most of the countries and data mining and processing begun in earnest. An ODINAFRICA Marine Information Management Planning workshop was held in Dakar, Senegal from 29 November – 2 December 2010 to agree on the Library Management software to use, and finalize work plan for information management activities in the current phase of ODINAFRICA. The work on the development of the African Register of Marine Species will commence in 2011, with support from OBIS. Collaboration with various projects and organizations in Africa was developed and/or strengthened. These include the four LME projects (ASCLME, BCLME, CCLME and GCLME), the Western Indian Ocean Marine Sciences Association, and UNEP.

- Science for Decision Making: A number of projects on development of Decision Support Tools were implemented in Kenya (4), Mozambique (2), Seychelles (2) and Tanzania (2). These focussed on development of numerical models covering 10 – 300km of coastline, and utilizing data collected locally and from remote sensing. The project were as follows: (i) Sea level rise and flooding in Malindi (KMD), (ii) Water quality and hydrodynamics in Mombasa (KMFRI), (iii) Hydrodynamics in Ungwana bay (KMD), (iv) Fisheries habitats in Shimoni (KMFRI), (v) Water quality in Bon Sinais (UEM/INAHINA), (vi) Water quality in Maputo (INAHINA), (vii) Fisheries habitats, Seychelles (SFA), (viii) Hydrodynamics and sea level rise in Mahe/Victoria (SFA/SMS), (ix) Shoreline change and sea level rise in Jambiani-Zanzibar (IMS/TAFIRI), and (x) Hydrodynamics in the Zanzibar channel (IMS/TAFIRI)
- Adaptation to Climate Change.: IOC collaborated with the African Union Commission in providing technical expertise for African Ministers and negotiators in their preparations for, and participation in the Climate Change Conference in Copenhagen, Denmark in 2009. This included expert advice and documents at meetings before the conference, and coordination of a team of African experts at COP15. The team of experts included African colleagues from Senegal, Tunis, Mozambique, and South Africa. A report on “African Science-Base for Coastal Adaptation” was prepared to provide the necessary background information.
- The Chair in Marine Sciences and Oceanography at the Eduardo Mondlane University (UEM) in Maputo, Mozambique, working in co-operation with the local stakeholders, completed a needs assessment on the environmental issues on wastewater in Quelimane city in view of securing environmental sustainability in coastal ecosystems. Teaching materials and a manual were produced. These will help improving municipal wastewater management in coastal cities of Mozambique. A training workshop on “Improving Wastewater Management in Coastal Cities” was organized, 30 August- 3 September, in Quelimane with the participation of some 30 trainees from municipal services, stakeholders and UEM researchers.
- UNESCO/IOC Chair in Marine Technology at the University of Dar es Salaam completed a study of coastal panaeid shrimp fishery in two districts of Tanzania that contribute with more than 80% of the total catch in the country. The study identified existing panaeid shrimp fishing systems and factors influencing panaeid shrimp abundances and yields through collection of data on meteorological and discharge for the local rivers, as well as established indigenous knowledge base on adaptation to climate change and variability. The newly established (end-2009) UNITWIN Network in Marine Biology and Sustainable Development in E. Africa (between the University of Dar es Salaam, Tanzania and the School of Ocean Sciences, Bangor University, United Kingdom) provided for a three-day training course on GIS, remote sensing and image processing for assessing coastal productivity.

Regional Committee for the Central Indian Ocean – IOCINDIO (1982)

22. The IOC Regional Committee for the Central Indian Ocean was established in 1982.

23. Membership: Australia, Bangladesh, France, India, Indonesia, Iraq, Iran, Kuwait, Malaysia, Maldives, Myanmar, Oman, Pakistan, Qatar, Saudi Arabia, Sri Lanka, Thailand, UAE, United Kingdom.

24. IOCINDIO has not had a secretariat. Activities have been implemented in the region through the ICG/IOTWS and IOGOOS, and with the facilitation by the IOC Perth Regional Programme Office..

25. The activities of the UNESCO IOC Perth Programme Office (PRPO) that have relevance and support to IOCINDIO are provided in the PRPO overview (below).

Regional Committee for the Central Eastern Atlantic – IOCEA (1984)

26. The IOC Regional Committee for the Central and Eastern Atlantic was established in 1984.

27. Membership: Angola, Benin, Cameroon, Congo, Cote d'Ivoire, Gabon, Gambia, Ghana, Guinea, Guinea-Bissau, Mauritania, Morocco, Namibia, Nigeria, Senegal, Sierra Leone, Togo. France, Portugal, Russian Federation (USSR), Spain, UK, Ukraine have participated in sessions.

28. The IOCEA Project Office was established at the Nigerian Institute for Oceanography and Marine Research (NIOMR) in February 2002. The operations of the project office were suspended in March 2004. IOCEA has not had a secretariat since then.

29. The recent activities implemented in IOCEA include:

- The Ocean Data and Information Network for Africa organised training courses covering a wide range of topics, including: data and information management, marine biodiversity, application of remote sensing and GIS to coastal management, development of coastal and marine atlases, development of electronic repositories of publications, sea level data analysis, development of websites, and coastal modeling. Tide gauges have been installed at the following locations: Limbe - Cameroon; Pointe Noire – Congo; Nouakchott - Mauritania; Takoradi – Ghana; and Dakar - Senegal.
- The IOC Self-Driven Capacity Development (CD) initiative funded by Sweden, focused on strengthening institutional capacities in three areas: leadership, proposal-writing, and team-building. Activities in modelling and emerging technologies for coastal environment management were prioritised and subsequently undertaken through the programme. The leadership programme had the following objectives: 1) improve the management and the protection of the ocean and coastal zones by strengthening the leadership capacity of senior-role players; 2) nurture a network of highly influential leaders who can integrate regional and local initiatives in a manner that builds sustainable and high impact outcomes, and 3) create an opportunity for personal learning and renewal. Three leadership workshops were organized for heads of institutions and senior role models.
- The GEF project on “Adaptation to Climate Change-Responding to Coastline Change-ACCC in its human dimensions in West-Africa through Integrated Coastal Area Management “. The total budget for ACCC which will be implemented for a 4 years ending in December 2011 is USD13.18 million, with the GEF providing USD3.3 million and the remaining being cash/in-kind contribution from the participating countries (USD6.24million), UNDP and UNESCO/IOC (USD510,000), and other partners (USD3.13million).The goal of the project is to reduce vulnerability and strengthen the adaptive capacities of countries and communities to negative impacts of climate change. The project will implement and conduct an array of efficient resistance mechanisms to reduce the impacts of coastal erosion due to climate change in vulnerable zones of the 5 participating countries [Cape Verde, Gambia, Guinea Bissau, Mauritania and Senegal]. The project, which is executed by UNDP and UNESCO/IOC has five components (2 national and 3 regional) as follows: The national goals are:(i) Pilot activities to strengthen

the adaptive capacity and the resistance of coastal ecosystems [and reduce coastal erosion linked to climate change], and (ii) Integration of adaptation into policies and integrated coastal zone management programs. The regional goals are: (iii) Strengthening the institutional capacities and human resources to design and implement adaptation strategies and measures in the coastal zones; (ii) Installation of an exchange mechanism to collect, store and diffuse best practices and documentation; and (iii) Installation of a learning mechanism. Strengthening of the regional cooperation to better take in account climate change aspects in coastal zone management. Learning, evaluation and increased management of adaptation

- The Capacity-development of IOC partnered Congolese Authorities and Scientists in the Development of the Congo Regional Initiative on Managing the Impacts of Coastal Erosion. IOC provided key technical support in organizing a high-profile meeting in Loango, Congo, bringing together coastal dwellers and community representatives, traditional chiefs, ministry representatives, and Congolese, regional and international scientists to map the way forward for a regionally coordinated approach to managing coastal erosion in Central Africa. As a follow-up to the Loango meeting, a workshop on decision support tools for better management of the coastal zones was organized in Kribi, Cameroon, and training provided on modeling. Equipment for coastal bathymetric survey and tidal/current measurement were provided to a number of institutions in Cameroon, Congo, Gabon, Nigeria and Togo for use by Central African scientists to survey coastal bathymetry.
- Morocco and Mauritania are members of the IOC Regional Network on 'Harmful Algae in North Africa' HANA, set up to review ongoing HAB research in the region, compile records of harmful algal events in the region, and develop recommendation for regional cooperation in HAB research and management.
- GOOS Africa has spearheaded the integration of multidisciplinary and multi-stakeholders approach for Applications of Earth Observation for Decision-Making Support for Coastal Zone Management, Water Resources and Climate Change with a strong emphasis on Science and Governance Dialogue. The two inter-related subthemes of this activity, namely (i) Strengthening Observing Systems Capacity for Managing and Mitigating the Impacts of Human Activities and natural hazards including Coastal Inundation (ii) Climate change impacts and water resources management in Africa directly respond to and contribute to the High-level objectives of IOC/UNESCO including Natural Hazards, Climate Change and Variability, Safeguarding the Health of Oceans Ecosystems and; Management leading to Sustainability of ocean environment. This Pan-African activity was implemented in Cotonou, Benin from 15-18 February 2010 upon the kind invitation of the Ministry of Environment and Protection of Nature of the Government of Benin. GOOS Africa was also involved in the establishment of a joint Fellowships programme with the Europe-Africa Marine Earth Observation Network (EAMNet). The EAMNet project was jointly designed by GOOS-AFRICA Network and European partners to promote training and capacity building in Africa in Earth observation and operational oceanography. This fellowship program is open to scientists, technicians, graduate students (PhD) and post doctoral fellows involved in oceanographic work at centres in any African country.

Black Sea Regional Committee (BSRC) (1995)

30. The IOC Black Sea Regional Committee was established in 1995.
31. Membership: Bulgaria, Georgia, Romania, the Russian Federation, Turkey, Ukraine
32. BSRC has no secretariat and staff assigned.
33. The recent activities implemented in BSRC have mainly been related to the IODE Black Sea network and include:

- Analysis of the structure and state of the Black Sea Region National Oceanographic Data Centres, development of the ODINBlackSea project website, the application of the E2EDM technology to integrate the non-homogeneous local data systems into unified distributed marine data system that will provide the transparent exchange between these local systems, E2EDM training courses (Obninsk, Russia, March 2009 and Istanbul, Turkey, December 2009) were organized.
- Implementation of the Black Sea SCENE project in collaboration with various EU partners. The FP6 RI Black Sea SCENE project established a Black Sea Scientific Network of leading environmental and socio-economic research institutes, universities and NGO's from the countries around the Black Sea and developed a distributed virtual data and information infrastructure that is populated and maintained by these organizations to improve the identification, access, exchange, quality indication and use of their data and information about the Black Sea. The Black Sea SCENE research infrastructure stimulates scientific cooperation, exchange of knowledge and expertise, and strengthens the regional capacity and performance of marine environmental data & information management, underpins harmonization with European marine data quality control/assessment procedures and adoption of international meta-data standards and data-management practices, providing improved data & information delivery services for the Black Sea region at a European level.

Regional Committee for the Southern Ocean (established 1967, dissolved 2001)

34. The IOC programme group for the Southern Oceans (later to become the IOC Regional Committee for the Southern Ocean – IOCSOC) was the first regional subsidiary body to be established by the Commission in 1967.

35. IOCSOC was dissolved in 2001 by the 21st session of the IOC Assembly. This was because the responsibility for coordination of operational oceanographic activities in the Southern Ocean, which was one of the Terms of Reference for the IOCSOC, had been subsumed within the Terms of Reference for GOOS and JCOMM, while the coordination of basic research in the Southern Ocean was taken on by an IOC/WMO/SCOR/SCAR Group of Experts on the Coordination of Oceanographic Research in the Southern Ocean.

OTHER REGIONAL NETWORKS AND OFFICES

36. The IOC global programmes have also established regional structures to assist in implementing their activities. These include:

- IODE Ocean Data and Information Networks
- GOOS Regional Alliances
- IOC Perth Regional Programme Office
- Intergovernmental Coordination Groups for Tsunami Early Warning and Mitigation Systems.
- IOC Working Groups on Harmful Algal Bloom

IOC Working Groups on Harmful Algal Blooms

37. The IOC Harmful Algal Blooms programme has two regional working groups:

- IOC Working Group on Harmful Algal Blooms in South America (FANSA). Coordinates research, organizes regional training and inter-calibrations, and compiles data on HAB events.

- IOC Working Group on Harmful Algal Blooms in North Africa (HANA). Coordinates research, organizes regional training, and compiles data on HAB events.

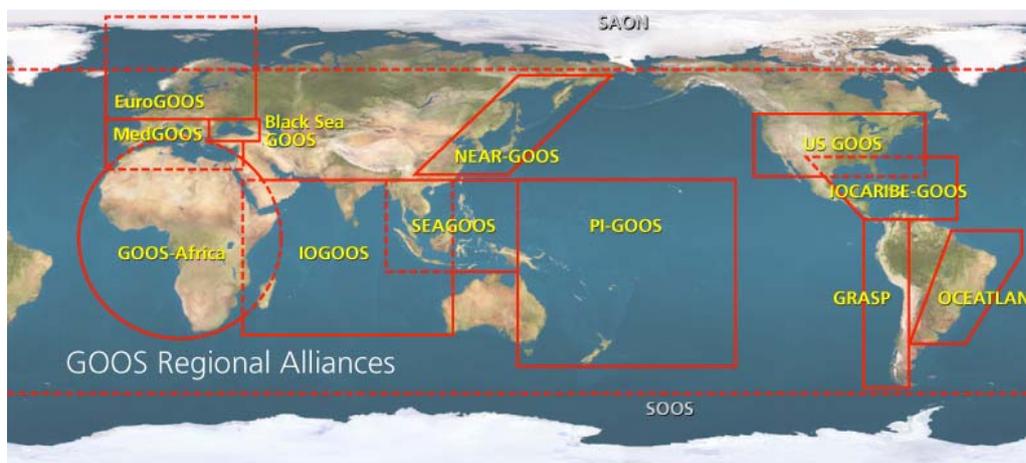
IODE Ocean Data and Information Networks

38. The IOC's International Oceanographic Data and Information Exchange programme has established the following seven Ocean Data and Information Networks (ODINs) through which it implements its activities:

- (i) Ocean Data and Information Network for Africa – ODINAFRICA: has received substantial funding from the Government of Flanders, Belgium to support the establish national oceanographic data and information centres, creation of directories, catalogues and databases for marine information, installation of tide gauges, development of coastal and marine atlases.
- (ii) Ocean Data and Information Network for the Caribbean and South America regions – ODINCARSA: has implemented ocean data and information management training courses and is involved in the development of the Caribbean Marine Atlas, and the implementation if the SPINCAM project (Southeast Pacific data and Information Network in support to ICAM).
- (iii) Ocean Data and Information Network for the Central Indian Ocean Region – ODINCINDIO: this network has been inactive, though efforts have been made to establish linkages with the Indian Ocean GOOS.
- (iv) Ocean Data and Information Network for European Countries in Economic Transition – ODINECET: has focussed on training in marine information management, and support for development of library catalogues and electronic repositories.
- (v) Ocean Data and Information Network for the Western Pacific region - ODIN-WESTPAC: works closely with the IOC Sub Commission for WESTPAC in ocean data and information management activities, including training programmes
- (vi) Ocean Data and Information Network for the Black Sea Region – ODIN-BlackSea: spearheading the development and piloting of the Ocean Data Portal.
- (vii) Regional Network of Pacific Marine Libraries - ODIN-PIMRIS: focussed on development of library catalogues and electronic repositories, as well as the PIMRIS portal.

GOOS Regional Alliances

39. There are twelve GOOS Regional Alliances, which comprise a GOOS Regional Council, whose chair ex officio, serves with the I-GOOS Board. In addition two polar observation networks are under consideration to become GRAs.



40. These are:

- (i) European Global Ocean Observing System (EuroGOOS).
- (ii) The Mediterranean Global Ocean Observing System (MedGOOS)
- (iii) The Black Sea GOOS
- (iv) The Near East Asian Regional GOOS (NEAR-GOOS)
- (v) Pacific Islands GOOS (PI-GOOS)
- (vi) The Indian Ocean GOOS (IOGOOS)
- (vii) The IOCARIBE GOOS (Caribbean and Adjacent Seas)
- (viii) GOOS Africa
- (ix) US GOOS
- (x) South East Asian GOOS (SEAGOOS)
- (xi) Regional Alliance in Oceanography for the Upper Southwest and Tropical Atlantic - (Aliança Regional para a Oceanografia no Atlântico Sudoeste Superior e Tropical – OCEATLAN).
- (xii) GOOS Regional Alliance for the South Pacific - Alianza Regional del GOOS para el Pacifico Sudeste (GRASP)

41. Under consideration for inclusion as GOOS Regional Alliances are the two polar observation networks:

- (i) Sustained Arctic Observing Network – Arctic SAON
- (ii) Southern Ocean Observing System (SOOS)

42. GOOS has a Regional Office in Rio de Janeiro (GOOS Rio Office), which is an IOC regional focal point aimed at driving cross-cutting programs to strengthen national capacities for observing the oceans, understanding their role in climate change, and better utilizing associated information for natural response planning and ocean forecasting. One of the office's key objectives is facilitation of the Pilot Research Moored Array in the Tropical Atlantic (PIRATA, <http://www.pmel.noaa.gov/tao/>). In its thirteenth year of operation the PIRATA Project continues to produce excellent data collection rates while maintaining high standards of quality control necessary to contribute to the knowledge of climate change and variability. The incorporation of CO₂ sensors on the ATLAS buoys contributes to studies of the health of ocean ecosystem. Under the scope of South Atlantic Climate Change Consortium, OCEATLAN, with financial support of Brazilian agencies, the Oceanographic Institute of São Paulo University pursues the development of a Brazilian Prototype of the ATLAS Buoy that, in addition to the three buoys of PIRATA SW Extension, will greatly improve understanding of the South Atlantic Convergence Zone and, thus, contribute to the prevention and reduction of the impact of natural marine hazards. The Rio Office also provides the Secretariat for the Regional Alliance in Oceanography for the upper Southwest and Tropical Atlantic (OCEATLAN) and oversees the implementation of actions as recommended in OCEANATLAN's Meeting Action Lists. The Memorandum of Understanding (MoU) for the functioning of the Rio GOOS Office expired in Dec 2009. The negotiations for a new MoU has commenced (or an optional Implementation Partnership Agreement), but has not been finalized.

IOC Perth Regional Programme Office

43. IOC Perth Office in Perth Australia operates under Agreement between its three Parties: the Western Australian State Government, Australian Bureau of Meteorology (BoM) and UNESCO IOC. The office continues the strong collaboration established in 1998 between these organizations, and is currently underpinned by a 5-year 'Cooperation Agreement' (2008-13). The Office services the balanced regional objectives of its three Parties as a regional node of the IOC, focusing on GOOS but increasingly addressing the full spectrum of IOC programs.

44. IOC Perth facilitates and coordinates programs mutually relevant to its sponsors, aligned with the IOC's High Level Objectives across climate change, ecosystem health, natural hazards and sustainable natural resource management, with cross-cutting capacity building a key priority. BoM continues to fully host and administer the Office. The Office works principally through its support, sponsorship and collaboration of Indian Ocean GOOS, Western Australia GOOS and Pacific Islands GOOS (totalling over 70 members) and is a key regional advocate for the IOC. It has a long-standing collaborative role in assisting SEAGOOS through collegial integration, supporting programs with thematic and geographical overlap, such as those that cover connecting IO/SEA waters. Through its interests across the IOGOOS domain, IOC Perth also makes an active contribution to programs and projects in support of East African, Middle Eastern and SW Indian Ocean communities. Some recent programmatic highlights include the following.

- IOC Perth generally coordinates, facilitates and sponsors GOOS regional alliances principally through Indian Ocean GOOS, Western Australia GOOS and Pacific Islands GOOS. It underpins their GRA annual meetings, associated projects and general activities and works closely with their respective Secretariats in India, Australia and Samoa, providing in-kind and cash resources. For example, IOC Perth promotes integration between South East Asia / Australia and IOGOOS in the development of the IOGOOS Pilot Project: *Modeling for Ocean Forecasting and Process Studies*, a Capacity Development initiative linking ocean observations, process studies, modelling and applications for societal benefit. Other recent capacity development events supported by the Office engaged constituents from the region, including east Africa / SW Indian Ocean through: the first (2010) and second (2011) IOC/WMO Data Buoy Cooperation Panel, *In-Region Western Indian Ocean Capacity Building Workshop*; the 2010 2nd GODAE OceanView *International Summer School for Observing, Assimilating and Forecasting the Ocean*, Perth; and the 2010 *Societal Applications in Fisheries and Aquaculture Using Remotely-Sensed Imagery* - International Symposium on "Remote Sensing and Fisheries" held in conjunction with a Chlorophyll Global Integrated Network (ChloroGIN) meeting, India.
- IOC Perth supports the Australian *Integrated Marine Observing System* and its Western Australian node and continued as member of the Australian Oceans Policy Science Advisory Group. Both programs facilitate development of coastal and ocean GOOS in and around Australia.
- IOC Perth attracts and manages extra-budgetary sponsorship from BoM, Australia, NOAA and UCAR, USA, and CoML, Sloan Foundation. The funds are used to provide important support for IOC objectives in the regions.
- IOC Perth hosted the 2010 meeting of IOGOOS, which enabled it to meet for the first time in conjunction with some of its key project groups: *CLIVAR/GOOS Indian Ocean Panel* (IOP); the bio-geochemical equivalent *Sustained Indian Ocean Biogeochemical and Ecological Research* (SIBER: under IMBER and IOGOOS); and the *IndOOS Resources Forum* (IRF) which assists IOP and SIBER in achieving their operational objectives. Under the IOGOOS framework, the *Indian Ocean Observing System* (IndOOS) continues to build GOOS. The RAMA deep ocean mooring network reached 28 of its planned 45 Indian Ocean stations in 2010. The IOP advanced Indian Ocean oceanographic science and coupled climate process studies. The work improves the characterisation of ocean processes and weather relevant to Africa, Asia and Australia and improves the understanding and prediction of climate change, of immediate relevance to the UNFCCC's IPCC. SIBER began its bio-geochemical science program in 2010, focusing on boundary currents, equatorial circulation, Indonesian Through flow and studies of primary production, variability, indicators of climate change, and ecological processes in the trophic structure. Such support will continue, including for the next set of integrated IOP/SIBER/IRF meetings to be held in India in 2011.

Tsunami Early Warning and Mitigation Systems.

45. The Indian Ocean Tsunami of December 2004 led to increase concern about the potential impact of tsunamis, and the establishment of Intergovernmental Coordination Groups to spearhead the development of Tsunami Early Warning Mitigation Systems covering different Ocean basins. These include:

- (i) Indian Ocean Tsunami Warning and Mitigation System (IOTWS)
- (ii) Tsunami and other Hazards Warning System for the Caribbean and Adjacent regions (CARIBE EWS)
- (iii) Tsunami early Warning and Mitigation System in the North Eastern Atlantic, the Mediterranean and Connected Seas (NEAMTWS)
- (iv) Pacific Tsunami Warning and Mitigation System (PTWS)

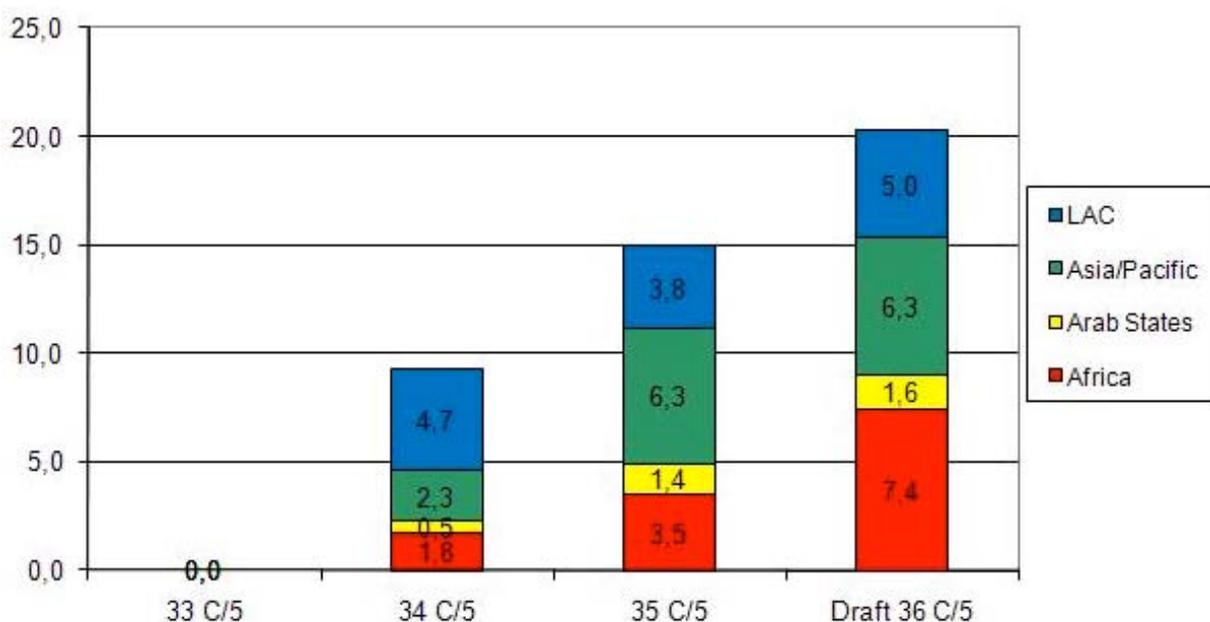
46. Several offices have been established, or designated to assist in coordinating the tsunami response efforts. These include:

- (i) The Secretariat for the Intergovernmental Coordination Group for the IOTWS is co-located with the IOC Perth Regional Programme Office at the Bureau of Meteorology in Perth, Australia. The IOTWS supports the development and implementation of a comprehensive end to end tsunami warning system for the Indian Ocean and a complementary programme of capacity building on tsunami protection for the region. The key activities of the Secretariat are: supporting meetings of the ICG; facilitating the liaison among the various national contact points and National Tsunami Warning Centres; maintaining a current list of operational national contact points and facilities and making it available on request to all Member States; organizing the liaison between ICG/IOTWS and the other ICGs, PTWC, JMA and with other Regional Tsunami Service Providers to facilitate best practices in tsunami warning; and initiating and supporting training activities .
- (ii) The Jakarta Tsunami Information Centre (JTIC) was established to increase and strengthen awareness about Tsunami and to assist the development of the TEWS in Indonesia through information Service. JTIC is located in the UNESCO Office Jakarta, Indonesia. JTIC focuses on the information provision through internet so can be fully accessed globally by anyone. The JTIC website hosts tsunami-related information, materials, data, program, etc. developed by others in order to be accessible and publicly used. The main aim of JTIC is to act as an Information Centre on: (i) The development and progress of TEWS in Indonesia and other Indian Ocean countries, both in the aspects of technical development of TEWS (Upstream) and community preparedness for tsunami threat (Downstream); (ii) General information on tsunami, tsunami education, awareness materials, tsunami mitigation, and tsunami preparedness; and (iii) Information on activities, news and articles pertinent to tsunami issues;
- (iii) The International Tsunami Information Centre (ITIC) -located in Honolulu was established in November 1965. ITIC maintains and develops relationships with scientific research and academic organizations, civil defence agencies, and the general public in order to carry out its mission to mitigate the hazards associated with tsunamis by improving tsunami preparedness for all Pacific Ocean nations. ITIC is also assisting in the development and implementation of tsunami warning and mitigation systems globally. The ITIC's responsibilities include: (i) monitoring the international tsunami warning activities in the Pacific and other oceans and recommending improvements in communications, data networks, acquisition and processing, tsunami forecasting methods, and information dissemination; (ii) bringing to Member and non-member States information on tsunami warning systems, on the affairs of IOC and ITIC, and on how to become active participants

in the ICG/PTWS; (iii) assisting Member States in the establishment of national and regional warning systems, and the reduction of tsunami risk through comprehensive mitigation programmes; and (iv) acting as a clearinghouse for the development of educational and preparedness materials, event data collection, and the fostering research and its application to prevent loss of life

DECENTRALIZATION OF RESOURCES

47. IOC has progressively increased the percentage of its Regular Programme budgets that is decentralized in the last three biennia. Starting with 33 C/5 (2006-2007) when the amount decentralized was minimal. In the current biennium - 35 C/5 (2010–2011), upto 15% of the Regular Programme budget will be decentralized. The amount is projected to increase to almost 20% in the next biennium.



SUMMARY OF STATUS OF REGIONAL SUBSIDIARY BODIES

48. The following is a summary of IOC Regional Activities:

	IOCARIBE	WESTPAC	BSRC	IOCEA	IOCINDIO	IOCWIO
Established	1982 (1975 as RC)	1989 (1977 as RC)	1995	1984	1982	1979
No of session [Average years between sessions]	3 sessions as RC, 11 sessions as SC [2.45 years]	5 sessions as RC, 8 sessions as SC [2.6 years]	2 sessions [7.5 years]	6 sessions [4.0 years]	3 sessions [6.7 years]	8 sessions [3.6 years]
Secretariat	Cartagena Professional (1) and Support (1)	Bangkok Professional (1) and Support (1)	NONE	NONE (Lagos operated for 2yrs)	NONE	NONE Mombasa operated for 4 years & Nairobi 4 years)
Other decentralized offices in the region	NONE	NONE	NONE	Dakar for ACCC	IOTWS IOC Perth	NONE
PROGRAMMES IMPLEMENTED						
Ocean Sciences	CLME HAB-ANCA ICAM	WESTPAC-HAB		ACCC		
Ocean Observations	IOCARIBE GOOS	NEAR-GGOS SEA-GOOS	BLACKSEA GOOS	GOOS Africa	IOGOOS	GOOS Africa IOGOOS
Ocean Services	ODINCARSA CMA	ODIN-WESTPAC	ODINBlackSea ODINECET	ODINAFRICA	ODINCINDIO COASTMAP-IO	ODINAFRICA COASTMAP-IO
Early Warning Systems	ICG/CARIBE	PTWS JTIC ITIC		NEAMTWS(?)	IOTWS	IOTWS
Policy	Training courses	Training courses		Training courses		Training courses

49. There is no RSB that encompasses South America. The closer we have are regional alliances in separate clusters (GRASP, OCEATLAN) and bilateral and multilateral agreements to address a particular issue). A few SA countries participate in IOCARIBE. The South Western Atlantic is covered by OCEATLAN, which is also active in implementation of SPINCAM and ODINCARSA activities.

Intergovernmental Oceanographic Commission (IOC)
United Nations Educational, Scientific and Cultural Organization
1, rue Miollis
75 732 Paris Cedex 15, France
Tel.: +33 1 45 68 10 10
Fax: +33 1 45 68 58 12
<http://ioc-unesco.org>