INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION
(of UNESCO)

Sixth Session of the IOC Regional Committee
for the Central Eastern Atlantic (IOCEA-VI)

Accra, Ghana
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Agenda Item 3 – IOC Regional Committee for the Central Eastern Atlantic (IOCEA), Resolutions EC-XXXIII.12 and EC-XXXIII.13 (document IOC/EC-XXXIII/3)

REPORT ON INTERSESSIONAL ACTIVITIES
FOLLOW-UP OF IOCEA-V AND REPORT OF INTERSESSIONAL ACTIVITIES IN THE IOCEA REGION

A. REPORT OF IOC ON THE ADOPTED RECOMMENDATIONS AND RESOLUTIONS OF COMMITTEE FOR THE CENTRAL EASTERN ATLANTIC (IOCEA-V)

During the IOCEA-V meeting which took place at Dakar, Senegal from 5 to 11 May 2000, four recommendations were made that were subsequently adopted at the 33rd session of the IOC Executive Council meeting in Paris from 20 to 30 June 2000. This intersessional report records how IOC/UNESCO realised these recommendations, and provides insight on those that were not realised.

Recommendations from IOC/EC-XXXIII

IOCEA-V.1 – Coordination and strengthening of IOC activities in the IOCEA region

(Inf. Doc. on the Memorandum of Understanding and letter of termination)

The session asked the ‘IOC Executive Secretary to appoint a Technical Secretary to be responsible for liaison at IOC Headquarters with the Member States and the regional officers’. Given the shortage of human resources at the secretariat, the Exec Sec acted as the focal point for the Regional Subsidiary Bodies until end 2009, requesting secretariat staff at appropriate times to liaise from Headquarters with the Member States and the regional offices. Since January 2010, the Deputy Executive Secretary has been tasked with this responsibility.

The request by IOCEA Member States to IOC to facilitate the establishment of a Regional Office for the IOCEA region, resulted in the establishment of a Memorandum of Understanding between the Intergovernmental Oceanographic Commission and the Nigerian Institute for Oceanography and Marine Research (NIOMR) to establish at NIOMR premises the proposed regional office for the IOCEA. This MoU, signed on 1 February 2002, established the IOCEA Project Office for a duration of ‘not more than two years until the next session of the IOCEA Regional Committee, which will recommend, by consensus, the renewal or termination of the’ MoU.

On 12 February 2004, based on its assessment of the effectiveness of the office as an implementing arm for IOC regional programs, the IOC Executive Secretary ‘suspended operation of the Project Office effectively as of 1 March 2004’. It was also decided that IOCEA-VI will be requested to adopt a recommendation to renew or fully terminate the operations of the Project office. These recommendations will be submitted to the IOC assembly for endorsement.

IOCEA-V.2 – Follow-up to PACSICOM and the African process


IOC has ensured follow-up to UNESCO technical workshops within the framework of the African Process. Primary amongst these has been the Memorandum of Understanding between UNESCO and the African Union Commission. Under this MoU, IOC partnered with the UNEP-GRID agency in raising awareness at the AU Summit meeting in Addis Ababa on the pending deadline for registering claims for national boundaries of their extended continental shelf. Subsequently, several member states in the IOCEA region were provided technical assistance. In the area of Climate change, under the same MoU, IOC raised awareness at 2 AMCEN meetings (Nairobi and Addis Ababa) on the need for emphasizing the importance of coastal...
areas in climate negotiations. African experts also created the report on “The African Science-Base for Coastal Adaptation: A Continental Approach” as a background paper to assist African negotiators within the context of the team of the African Union Commission (AUC). A team of coastal and marine experts were also present in Copenhagen at the United Nations Climate Change Conference (7-18 December 2009) to support negotiators. Further details on experts from the region and outputs of this activity are reported under Agenda Item 3.2.1.

IOCEA-V.3 – Strengthening & development of LME projects of IOCEA region

IOC in collaboration with the Global Environmental Facility (GEF), FAO and UNEP has been able to complete several projects within the region. This aspect is more fully reported under Agenda Item 3.3.1.

IOCEA-V.4 – Partnering African regional institutions to develop regional marine science

Partnering NEPAD

IOC has at various times worked with different African regional organisations. IOC and NEPAD have developed a website [http://ioc3.unesco.org/nepad-cosmar/](http://ioc3.unesco.org/nepad-cosmar/) which has been a useful source of information on coastal and marine programmes. Furthermore NEPAD COSMAR and IOC/ODINAFRICA have developed a database on ongoing and proposed programmes and projects in coastal states of Africa.

Partnering NEPAD

The Science and Human Resources division of the AUC has been our partner in climate-change actions in Africa. We have also encouraged the use of national and regional expertise such as consultants and technical secretaries. IOC has also worked with the BCLME and has approached the GCLME on several occasions for collaborative work.

Partnering PIRATA

PIRATA array program where North- and South-East extensions and two equatorial ATLAS moorings give the ‘region an opportunity to study ocean-atmosphere interactions in the tropical Atlantic that affect regional climate variability on seasonal, inter-annual and longer time scales’. (See [http://www.pmel.noaa.gov/pirata/pir_implement.html](http://www.pmel.noaa.gov/pirata/pir_implement.html) for further details.)

Institution building

IOC has given the highest priority to institutional support at several levels as can be seen in the Capacity-Development report on Leadership, team building, bid and proposal writing within the region of IOCEA. The ODIN-Africa project too has training built in to many of its projects. CD of IOC has raised awareness of the benefits of coastal modelling in battling erosion at a Govt of Congo funded workshop on addressing sub-regional erosion. This was followed by an awareness and hands-on training workshop on digital coastal models in the Cameroon.

Partnering in Education networks

UNESCO/IOC has established a useful network of chairs in Integrated Coastal Management and Sustainable Development, with one established at the University of Cheikh Anta Diop, Senegal. IOC is also proposing to set up a Chair in Coastal Erosion in the region. IOC has also brought together the Universities of Kenya and Obafemi Awolowo University Nigeria to collaborate on a new partnership of fostering innovative small industries at the universities.
Partnering for outreach in Research

The IOCEA Chair has been in correspondence with Portugal on hosting a science symposium in Madeira that reviews the status of marine science in the IOCEA region, and is followed by the regional committee meeting.

The Regional Committee will be requested to explore mechanisms to host the Marine Science workshop jointly with and in Portugal.

B. REPORT ON THE INTERSESSIONAL ACTIVITIES OF THE IOC PROGRAMMES WITHIN THE REGION OF IOCEA

3.1 NON-LIVING RESOURCES

3.1.1 African Sea-Level Network

The African Sea Level Network website (www.iode.org/glossafrica): has been developed by ODINAFRICA in collaboration withGLOSS to provide information on the status of the African Sea Level Network. Information available on the site includes: Details of planned and installed stations, Access to sea level data from various sources, Equipment types and suppliers, Reports on installation of sea level stations, Reports on assessment of potential sea level station locations, Workshop and training course reports, and National sea level status reports.

The Ocean Data and Information Network for Africa, in collaboration with the Global Sea Level Observing System (GLOSS), Proudman Oceanographic Laboratory (POL), and the University of Hawaii Sea Level Centre (UHSLC) contributed to the expansion and upgrading of the sea level observing network in the IOCEA region through upgrade of existing stations and installation of tide gauges at new locations.

Technical visits were undertaken to inspect the sites proposed for the installations in Cameroon, Congo, Mauritania, Morocco and Senegal. The reports of these missions are available at www.iode.org/glossafrica. Detailed site information has also been provided by local agencies in Cote d’Ivoire.

Tide gauges were subsequently installed at the following locations: Limbe - Cameroon (June, 2008); Pointe Noire – Congo (April 2007); Nouakchott - Mauritania (December 2006); Takoradi – Ghana (December 2006); and Dakar - Senegal (November 2007). Data is transmitted via the Meteosat-5 on to the Global Telecommunication System (GTS).

ODINAFRICA collaborated with the Instituto Geofísico D. Luís (IDL), Lisbon, Portugal to collocate Global Navigations Satellite Systems – GNSS receivers at the sea level stations in Takoradi (Ghana). The installation of the GNSS stations near tide gauges provides the connection between the horizontal and the vertical datum at these locations in order to derive absolute or climate related signals in mean sea level from the tide records. This station will contribute to better understanding of the kinematics of the Nubian. The station can also be eventually used to monitor and quantify far-field seismic events in the Atlantic Ocean.

3.1.2 Training on sea level instrumentation, data management and product development

The first ODINAFRICA/GLOSS training course on sea level measurement and data interpretation and related fields was held on 13-23 November 2006 at the IODE Project Office, Oostende, Belgium. Fifteen trainees from Angola, Cameroon, Congo, Cote d’Ivoire, Djibouti, Ghana, Kenya, Mauritania, Mozambique, Nigeria, Seychelles and Tanzania attended the
course. The training workshop was supplemented by training on installation and maintenance of equipment.

GLOSS provided fellowship support for the Nigerian Institute of Oceanography and Marine Research for training on installation of a tide gauge acquired for the Lagos sea level station.

ODINAFRICA collaborated with the Western Indian Ocean Marine Science Association (WIOMSA) in an initiative to analyse data from selected stations and prepare tidal predictions. Experts from Cote d’Ivoire undertook the analysis of sea level data for stations in IOCEA region. The predictions are available through the ODINAFRICA and GLOSS Africa websites.

The Flanders UNESCO Science Trust fund (FUST) provided support for maintenance/levelling assistance for ODINAFRICA installed sea level gauges in Cameroon, Congo, Djibouti, Egypt, Ghana, and Morocco. Periodic preventive maintenance and check of tide gauge calibration/levelling to geodetic benchmarks are needed to establish high quality sea level observation time series.

3.2 CAPACITY DEVELOPMENT

3.2.1 Self-Driven Capacity Development in leadership, team-building, and resource mobilisation

The IOC Self-Driven Capacity Development (CD) initiative funded by Sweden, focussed on strengthening institutional capacities in three areas during its initial phase (2007-2009): leadership, proposal-writing, and team-building. Activities in modelling and emerging technologies for coastal environment management were prioritised and subsequently undertaken through the programme (see 3.3.3 for further details).

Leadership:

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. The first leadership workshop for heads of marine related institutions and senior role models the region was held in Libreville, 13-16 March 2007. Participants met for the first time in a forum dedicated to capacity-development, representing Angola, Benin, Cameroon, Congo, Côte d’Ivoire, Gabon, Ghana, Guinea, Namibia, Nigeria, Senegal, and Togo. The foundations of good leadership were discussed and provided opportunities for sharing and networking. A second advanced leadership workshop was held in Accra, 1-3 October 2007 with participants from Ghana, Benin, Cameroon, Cote d’Ivoire, Gabon, Guinea, Nigeria, Portugal, Senegal, and Togo. Experience was shared on application of techniques from the first workshop, and priorities in capacity development in the region were agreed upon. Participants from the region also attended the Third Advanced Leadership workshop for the Western Indian Ocean Region, Maputo, Mozambique, 10-14 April 2008, including Cameroon, Ghana, and Nigeria.

Bid writing

The second component of the IOC Capacity Development program was implemented in the IOCEA region through a bid writing workshop titled “Partnering Congolese Authorities and Scientists in the Development of the Congo Regional Initiative on Managing the Impacts of Coastal Erosion”. This high-profile meeting in Loango, Congo, 6-10 October 2008, brought together coastal dwellers and community representatives, traditional chiefs, ministry representatives and 2 Ministers, and Congolese, regional and international scientists from
6 IOCEA region countries to map the way forward for a regionally coordinated approach to managing coastal erosion in Central Africa. Training was provided to participants to improve their proposal and bid writing skills to attract additional institutional funding for their institutions, focused upon the prioritised issue of coastal erosion.

**Team building**

The third component of the Capacity Development programme was implemented in the IOCEA region through a Team Building Workshop in Accra, 26-28 September 2007. This workshop focused on Ghanaian institutes that dealt with environmental issues in the coastal zone. Participants received hands-on practical exercises to address challenges of team building. An important performance indicator of the uptake of the program is that, following the IOC training, the Ghanaian ministry of Environment and the Obafemi Awolowo University both invited the same consultant to conduct further workshops in their organizations, and paid for the workshops with their own funds.

**Preparation for the Climate Change Conference (COP15)**

The African Union Commission, with support of the CD section of UNESCO/IOC, highlighted the increasing costs attributed to climate change impacts on the coastal zones of Africa at two AMCEN meetings in Nairobi and Addis in preparation for COP15. The presentation in Nairobi was made by Isabelle Niang, Project coordinator ACCC, Senegal, and the one in Addis Ababa was made by the Permanent Secretary, Ali Mohammed of Kenya. Subsequently, technical support was provided to African ministers and negotiators in preparation for the Climate Change Conference. 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. All documents were made available through AMCEN and the African Union Commission.

### 3.3 SUSTAINABLE MANAGEMENT OF MARINE RESOURCES AND PROTECTION OF BIODIVERSITY IN THE IOCEA REGION

**3.3.1 Overview of existing links with Large Marine Ecosystems (LMEs)**

IOC in collaboration with GEF, FAO and UNEP have been able to complete several projects within the LME regions, in support of sustainable management of resources and protection of biodiversity. Important amongst these have been the Fish and Fish Modules project of BCLME; and the development of IOC-UNESCO-GEF Trans-Boundary Water Assessment Programme. This is a systematic and scientifically robust methodology for assessing the changing conditions of five different types of trans-boundary water systems resulting from human and natural causes, that will allow the policy makers, and international organisations to set science based priorities for financial resource allocations.

A large network of partnership with IOC-UNESCO already exists for LMEs, including NOAA, GEF/LME projects, LOICZ, GPA, UNEP, FAO, WMO, and IUCN.

**Activities with the Benguela Current Large Marine Ecosystem - BCLME**

(a) BCLME Coordinator together with the GOOS-AFRICA Coordinator and Department of Oceanography, University of Cape Town (UCT) planned the Leadership Workshop on Operational Oceanography and Remote Sensing, in October 2005 in Dakar, Senegal. The output was a book “African Oceans 2025: How African marine scientists and managers foresee the development of Operational Oceanography in Africa by 2025?”
(b) The Pan-African and GOOS-AFRICA network in a workshop to increase the critical mass of operational oceanographers concluded that development of appropriate skills and capacity must be through raising awareness on needs and opportunities.

(c) IOC advocated that BCLME include sea level observations in their physical oceanography measurement program. The output was the purchase of a tide gauge for Namibia and two gauges for South Africa.

Activities with the Guinea Current LME Project - GCLME

Supported by UNIDO, GCLME targets to recover and sustain depleted fisheries, restore degraded habitats, and reduce land and ship-based sources of pollution. The GCLME project has established regional working groups and a Regional Coordination Unit (RCU). Work is ongoing to: create economic tools for SAP (Strategic Action Plan) implementation; update the legal framework needed to address land based sources of pollution and conserve marine biodiversity; and build human, technical and financial capacity for fisheries regional governance, scientific assessments and management decisions. Technical evaluations for projects in Togo, Ghana, and Cote d’Ivoire were undertaken, and a project document (PIF) was prepared for the second phase of the GCLME project to continue to the end of 2010.

Activities with the Canary Current Large Marine Ecosystem - CCLME

IOC is working with participating states of the Canary Current LME, and their development partners, to re-launch the preparatory project as soon as possible, and mobilise the funds necessary for its implementation. The IOC/GOOS-AFRICA Team attended and contributed to the Road Map Workshop of the CCLME, held in Dakar, 10-12 October 2005, and initiated collaboration between the GCLME and the CCLME.

Next steps in the LME process

IOC has participated in all LME overview meetings. At the eleventh meeting in Paris, July 2009, an overview of the LMEs decided that future work should address:

- Current ocean issues that require attention with regard to the effects on the sustainability of coastal ocean goods and services are Global climate change and Acidification of the oceans.
- Successful LME projects lay the foundation for an LME “Community of Practice” that can play an important role in sharing practises that have succeeded and exchange lessons learned.

3.3.2 Adaptation to Climate Change-Responding to Coastline Change-ACCC in its human dimensions in West-Africa through Integrated Coastal Area Management

On the basis of the priorities identified in the African Process and at the request of Senegal, IOC took the lead in the formulation of regional GEF project addressing the issue of coastal erosion, climate change impacts on the coast and Integrated Coastal Area Management. Following a planning workshop organized in 2004 in Dakar, the project proposal was submitted to GEF and approved in 2005. The project, Adaptation to Climate Change in Coastal Zones of West Africa (ACCC), covers 5 countries (Cape Verde, Gambia, Guinea Bissau, Mauritania and Senegal) and is implemented in collaboration with UNDP. The participating countries lack scientific and institutional capacities, and have weak planning and coordination mechanisms; this acts as a further constraint to the sustainable development and use of the coastal environment, and ultimately contributes to increased coastal erosion. The implementation of this project has led to a first phase in-depth assessment of shoreline change due to climate
change in the participating countries. Vulnerability assessments have been implemented and guided in turn the identification and subsequent implementation of appropriate and sustainable responses (adaptation) to shoreline change within the framework of Integrated Coastal Area Management (ICAM) in each of the countries.

Phase 1 of the project (2005-2007) led to the following activities:

1. Consultation with national stakeholders (govt. & technical agencies, civil society/NGOs);
2. Technical studies & assessments (national reports on predicted impacts of Climate Change - CC on coasts);
3. Project write-up;
4. Mobilisation of co-financing resources ($9 Million identified).

The Implementation phase (2008-2011) project is expected to produce the following results:

1. Implemented pilot projects to reduce climate-change induced coastal erosion and maintained ecosystem resiliency (1 site per country where adaptation implemented - mangroves plantation, sand dune stabilisation, legislation, zoning plans);
2. Integrating CC concerns in coastal development policies at local/national levels;
3. Improved monitoring & Capacity-development to respond to CC induced coastal erosion;
4. Learning, evaluation and adaptive management increased.

The Project Coordinating Unit has been operational since December 2008 from the UNESCO BREDA office in Dakar and is led by Dr. Isabelle Niang.

3.3.3 Capacity-development of local stakeholders to manage coastal zones and develop a sustainable use of natural resources activities

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, on 6-10 October 2008, bringing together coastal dwellers and community representatives, traditional chiefs, ministry representatives and 2 Ministers, and Congolese, regional and international scientists to map the way forward for a regionally coordinated approach to managing coastal erosion in Central Africa.

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 modelling. The list of experts from the IOCEA region who participated in these training programmes is available on the IODE web site.
3.3.5 Biodiversity and Atlas work

ODINARICA commenced work on the development of an African Register of Marines Species of all marine biodiversity information compiled to date in the series of marine biodiversity workshops organized for selected taxa. Three workshops have been held at IODE Project Office in Oostende (Molluscs, March 2006; Sponges, November 2006; and Decapods, June 2007). The compiled data was incorporated in the Ocean Biogeographic Information System (OBIS).

ODINAFRICA has also developed the African Marine Atlas as a Pan-African regional product providing access to maps, images, data and information for a wide range of user at the regional scale. The atlas currently comprises:

(i) Static website hosted by IODE programme at (http://omap.africanmarineatlas.net) providing access to over 800 downloadable data products in marine geosphere, hydrosphere, atmosphere, biosphere, geopolitical and the human socio-economic dimensions. A base maps theme provides spatial reference to the other data layers.

(ii) Map server demonstration site: (www.africanmarineatlas.net) developed by atlas team as a training & data dissemination exercise that uses a data sub-set in the static site.

The Atlas incorporates existing geo-referenced datasets available in the public domain, and also data products created from national and international marine data collections by scientists participating in the ODINAFRICA program. The Atlas indicates gaps in knowledge and information base, where additional efforts may be directed. It will also act in other ways as a guide to recreational opportunities and tourist attractions.

The website is one of a set of Marine Atlas products that will include web data services, web mapping and an Atlas publication when completed. Primary partners in this project were the UNEP, and the African Coelacanth Ecosystem Programme (ACEP).

The focus of the current phase of ODINAFRICA is on the development of National Marine Atlases that can be used for Integrated Management of Coastal Areas. The countries that will participate in this initiative include: Angola, Benin, Cameroon, Congo, Côte d’Ivoire, Ghana, Guinea, Mauritania, Namibia, Nigeria, Senegal, South Africa, and Togo.

3.4 OCEAN DYNAMICS AND THEIR IMPACT ON COASTAL PROCESSES IN THE IOCEA REGION

3.4.1 Activities on model-based decision-support tools for coastal management

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, on 23-27 November 2009. 13 participants (from Angola, Congo, Cameroon, DR Congo and Gabon) were trained in modeling at the workshop, with several expressing strong interest in pursuing further work. One portable tide gauge installed in the port of Kribi with Cameroonian colleagues trained to use it. One GPS-echo sounder left each for Cameroon, Congo, Gabon, for use by Central African scientists to survey coastal bathymetry.

3.5 MARINE AND COASTAL POLLUTION IN THE IOCEA REGION

Morocco and Namibia are active members of the IOC Intergovernmental Panel on Harmful Algal Blooms. IPHAB-IX outlines the priorities of the IOC HAB Programme for 2010-2011. There are limited activities in the IPHAB Work Plan targeted to IOCEA as there were no proposals or requests from the region except from Morocco and Namibia.
The HAB Programme between 2007 and 2009 trained a total of 27 scientists in HAB observations and identification - 5 scientists were from Angola, 9 from Morocco, 11 from Namibia, 1 from Portugal and 1 from Spain. Training was on the following courses:


5. IOC Training Course and Identification Qualification in Harmful Marine Microalgae, IOC Centre on Harmful Algae, Copenhagen; E-learning May-June, practical Sept 2007

6. IOC Training Course and Identification Qualification in Harmful Marine Microalgae, IOC Centre on Harmful Algae, Copenhagen; E-learning May-June, practical August 2008

7. IOC Training Course and Identification Qualification in Harmful Marine Microalgae, IOC Centre on Harmful Algae, Copenhagen; E-learning May-June, August 2009


10. IAEA Regional Training Course on Harmful Algae, Cape Town, 7-10 May 2007.

Morocco and Mauritania are members of the IOC Regional Network on ‘Harmful Algae in North Africa’ HANA, which met in Alexandria, Egypt, from 7 to 9 November 2009, 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.

South African scientists are actively involved in the IOC-SCOR research programme on the Global Ecology and Oceanography of Harmful Algal Blooms, GEOHAB. In particular, South Africa is active in the GEOHAB Core Research Project on HAB in Upwelling Systems. GEOHAB fosters and coordinate nationally funded research. For more information see www.geohab.info, and the reference document at: http://www.ioc-unesco.org/hab/index.php?option=com_oe&task=viewDocumentRecord&docID=4645.