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**INTERGOVERNMENTAL OCEANOGRAPHIC COMMISSION**  
(of UNESCO)

**THIRD SESSION OF ODINAFRICA PROJECT MANAGEMENT COMMITTEE**  
**MEETING**

IOC Project Office for IODE, Ostend, Belgium  
30 January - 3 February 2006

**SUMMARY REPORT**

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## 1. OPENING OF THE MEETING

The ODINAFRICA Project Manager, Mr Mika Odido, welcomed the participants to the third session of the ODINAFRICA Project Management Committee. He reminded them that the objectives of the session were:

- (i) Revise WP4 on the basis of reports of national ICAM consultations, taking into account other related ongoing initiatives in the region, as requested by the ODINAFRICA Project Steering Committee
- (ii) Review the implementation of ODINAFRICA-III and consider provisional implementation plan for 2006-2007
- (iii) Finalise plans for the ODINAFRICA Project Seminar 24-28 April 2006

The agenda for the meeting is provided in Annex I.

He informed the participants that in view of the focus on WP4, several ICAM experts from several countries participating in ODINAFRICA have been invited to the meeting, in addition to the ODINAFRICA Regional Coordinators. He conveyed the apologies of the ODINAFRICA Regional Coordinator for WP2 (Coastal Observing Systems) Dr Angora Aman who was unable to attend due to delays in procuring visa, and the Coordinator for WP3B (Information Management) Mrs Arame Keita who had other unavoidable commitments.

The List of Participants for the Session is given in **Annex II**.

Mr Odido highlighted some activities that had been implemented since the last session of the Project Management Committee. These included training courses on Marine Biodiversity Data Management, Websites Development, and Development of Electronic Repositories. Details are discussed under the relevant work packages. He pointed out that the costs of equipment for institutions that joined the project during the current phase, and that for organising the training courses had turned out to be much higher than planned. Some of the countries has delayed in finalising contracts national activities, leading to delays in processing of new contracts.

The Session noted with sorrow and deep regret that the ODINAFRICA community had lost two members during the period- Dr Charles Gabche who was data manager for Cameroon in the period 2001-2003, and Dr Sekou Cisse who was the ODINAFRICA National Coordinator for Guinea and also served as Regional Coordinator for IOCEA in the last phase of ODINAFRICA. The Committee conveyed their condolences and that of the entire ODINAFRICA community to the families and friends of the deceased.

Their obituaries are included as Annex ???

## 2. REVIEW OF WP2: COASTAL OBSERVING SYSTEMS.

The objectives of this work package is to upgrade and expand the present African network for in-situ measurements and monitoring of ocean variables, provide near real-time observations of ocean variables and build adequate capacity for collection, analysis and management of sea-state variables.

The focus is on installation of new tide gauge stations and upgrading existing stations. Additional oceanographic sensors would be installed at selected locations. Training on installation and maintenance of equipment, as well as analysis and interpretation of data would be provided to technicians and scientists.

The occurrence of the tsunami in the Indian Ocean on 26 December 2004, and its aftermath demonstrated the urgent need to have an Indian Ocean Tsunami Warning System. The sea level stations installed by ODINAFRICA will be a core element of the warning system.

A survey of the current status of the network was undertaken in order to select potential locations for installation of tide gauges, and also to assess which existing equipment required upgrade. This was done on the basis of a questionnaire sent to national contacts, as well as reports from previous surveys (GLOSS, GOOS Africa).

The survey revealed the existence of at least 40 operational stations spread unevenly along the African coastline and island states. In the Indian several stations installed by the University of Hawaii within the framework of the TOGA project are still functioning. South Africa has an extensive network of gauges along its coastline. Other countries that have established national tide gauge networks include Morocco, and Mozambique. Large stretches of coastline did not have any operational gauges. There were gauges at eight (8) locations which were not working. Only two stations in the entire network met the specifications for tsunami early warning system (Rodrigues and Port Louis, both in Mauritius). The most common model of installed tide gauge was the OTT float gauge, followed by Handar encoders at stations that are installed and maintained by the University of Hawaii Sea Level Centre in the Indian ocean.

## **2.1 Selection of potential sites for installation/upgrade**

ODINAFRICA will install 12 sea level stations, so as to ensure that there is a network of evenly spaced along the African coast, providing data near real time, and addressing the key oceanographic phenomena. The selection of the stations is based on responses to questionnaires circulated to national coordinators for WP2, and reports of technical missions to selected countries. The technical missions have so far covered: (i) Mauritania, Cameroon, and Congo (by David Dixon in October 2005), and Egypt, Sudan and Djibouti (Mr Cherif Samari). It is proposed that similar missions be undertaken to East Africa and North Africa in the first half of 2006. The stations planned for installation are:

- West Africa gauges: Nouakchott, Limbe, Takoradi and Pointe Noire
- East Africa gauges: Nosy Be, Fort Dauphin, Moroni and Djibouti
- North Africa gauges: Alexandria, Cap Bon and Agadir

The station in Dakar, Senegal will also be re-activated and upgraded with assistance of the University of Hawaii Sea Level Centre (UHSLC).

The list of stations that have been identified for installation/upgrade by other partners are provided below:

**IOTWS/GLOSS:** has already upgraded stations located at Port Louis and Rodrigues (Mauritius), and will also do the same for Mombasa and Lamu (Kenya), Zanzibar (Tanzania), and Pointe de la Rue (Seychelles).

They will also install satellite transmitters at Simonstown, Port Elizabeth and Durban (South Africa)

**BCLME:** plans to install gauges at Lamberts Bay (South Africa), Luderitz and Walvis Bay (Namibia), and Namibe and Luanda (Angola).

**SHOM (France):** plans to instal gauges at Point des Galets-La Reunion, Dzaoudzi- Mayotte (France), and Tamatave (Madagascar).

Several countries participating in ODINAFRICA also have plans to procurement tide gauges with their own resources and may require assistance to install them.

## 2.2 Procurement and installation of equipment

Following consultations with the WP2 Advisory group it was agreed that the model of gauge to be installed in the OTT Kaelesto, with OrbComm for data telemetry.

The following basics requirements should be addressed by the countries receiving the tide gauges:

- tide gauge house
- electricity at site
- telephone at site
- free and unrestricted access to the data collected by the equipment
- assistance to help in facilitating the installation.

The Proudman Oceanographic Laboratory (Permanent Service for Sea Level)-POL/PSMSL, the University of Hawaii Sea Level Centre and the South African Hydrographic Office have agreed to assist in installation of tide gauges and training of technicians and scientists on installation and maintenance of the equipment. Free lance technicians will be used where necessary to ensure that all the stations are installed by end of the first quarter of 2007. The first set of four tide gauges have already been procured and are being configured at POL/PSMSL in readiness for installation.

In order to ensure that the tide gauges continue operating after installation, it is proposed that a maintenance tour be organised for each station at least once in 18 months. This will initially comprise technicians from out-side the region, who will also train local technicians to eventually take over the tasks.

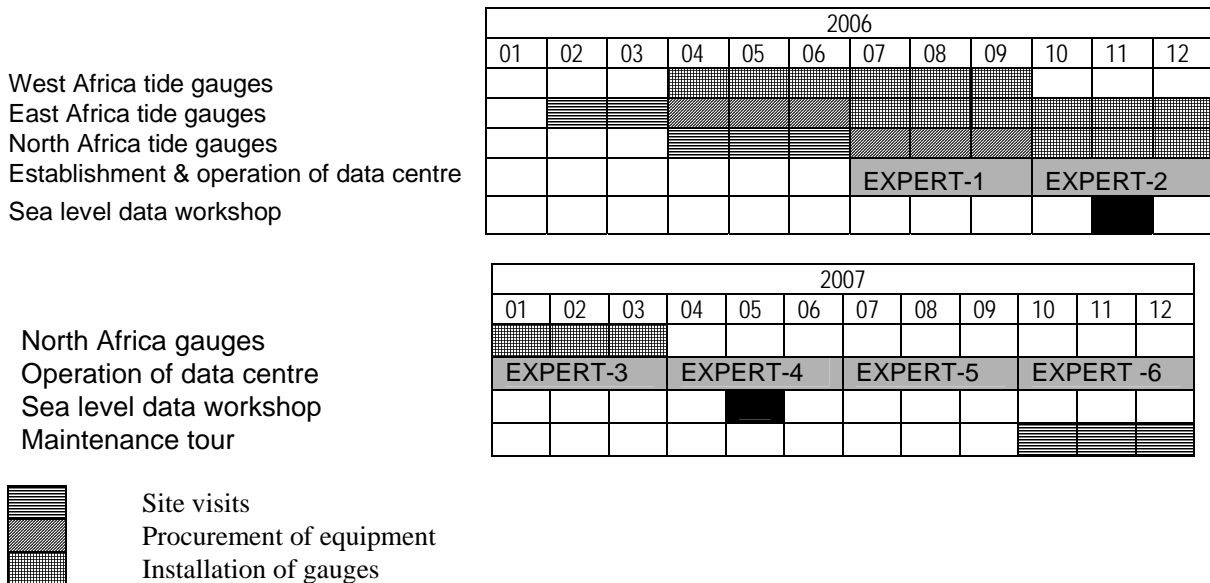
### 2.3 Data transmission, processing and archiving

The data from the sea level stations will be archived by each of the national oceanographic data and information centres. The stations will also transmit data real-time to the ODINAFRICA Sea Level Data Centre, which will initially be established at the IODE Project Office due to the excellent facilities available (including a 800Mbps internet connection) and manned on a rotational basis by scientists from different institutions participating in ODINAFRICA. Each of the scientists would run the centre for a period of 3-months. The data centre will collate, process and quality control data from the tide gauges. The centre will also: (i) monitor the stations and request for remedial action where a station does not transmit data, (ii) develop near real-data display, and (iii) provide a back-up to the centres handling tsunamis and other marine related hazards.

### 2.4 Sea level training courses

The first Sea level data analysis and interpretation training course for ODINAFRICA will be held from 13-23 November 2006 at the IODE Project Office, and a second one in May 2007 at the same venue. The ODINAFRICA Regional Coordinator for WP2 will draft minimum background required for participants in these training courses. They should be able to use the skills acquired in tidal predictions, modelling and real time display of data.

### 2.5 WP2 Work plan



### 3. REVIEW OF IMPLEMENTATION OF WP3: DATA AND INFORMATION MANAGEMENT

The focus of the first year was providing assistance to the 5 countries that joined ODINAFRICA during the current phase (Algeria, Angola, Congo, Egypt and Namibia) to establish/strengthen their NODC's, while providing support for maintenance of NODCs and their operations in the other 20 countries which participated in the earlier phase.

The ODINAFRICA budgets for national activities were allocated as outlined below:

	(A)	(B)	(C)		
	2004/5	2005/6	2005/6	2006/7	2007/8
Operational expenses Data Centres	760	1,750	1,750	1,760	1,320
Hydrographic data sets	440	400	400	-	-
Equipment upgrade NODC	800	700	-	-	-
Operational expenses infor. centers	750	1,750	1,750	1,760	1,320
Equipment upgrade NODC	800	700	-	-	-
Internet access	450	1,050	1,050	1,056	880
National ICAM consultations	1800	-	1,800	-	-
Mainstreaming OBIS	-	850	850	-	-
	5,800	7,200	7,600	4,576	3,520

GROUP (A) 2004/2005: Activity financing contracts were processed for 16 countries to cover the period October 2004 – August 2005. These were: Benin, Cameroon, Comoros, Cote d'Ivoire, Ghana, Guinea, Kenya, Mauritania, Mauritius, Morocco, Nigeria, Mozambique, Senegal, Tanzania, Togo and Tunisia.

GROUP (B) 2005/2006: Activity financing contracts have been processed for 9 countries to cover the period November 2005 – August 2006. These are: Benin, Cameroon, Ghana, Kenya, Mauritius, Nigeria, Senegal, Seychelles and Togo. The contracts for Cote d'Ivoire, Tanzania and Tunisia will be processed by end of January 2006.

GROUP (C) 2005/2006: Activity financing contract have been processed for 3 countries to cover the period November 2005 – August 2006. These are: Angola, Egypt and Namibia. In the case of Namibia the funds for purchase of equipment locally is added, making the total USD16,600. Contracts for Algeria and Congo will be processed in January 2006.

The resources allocated to the five new countries (Algeria, Angola, Congo, Egypt and Namibia) and those for Gabon for year 1 were used for the data management training course.

#### 3.1 Delivery of equipment to new NODCs

The order for equipment for NODCs in Algeria, Angola, and Egypt was placed at the end of November 2005. These comprised one PC, and Laserjet printer for the data centres, and 2 computers, scanner and Deskjet printer for the information centres. It is expected that the equipment will be delivered before the end of January 2006. The funds for equipment for Namibia was included in the local contracts. Egypt and Namibia will get the complete set of equipment for the data and information centre. However in the case of Algeria, Angola and Congo the information centre will only receive PC and printer to be used by the "users" since no librarian/documentalist was trained. The specifications for the equipment is given overleaf.

**ODINAFRICA-III EQUIPMENT SPECIFICATIONS**

<b>SYSTEM ONE: FOR DATA CENTRE</b>	<b>SYSTEM TWO: LIBRARIAN (DEVELOPING DATABASES)</b>	<b>SYSTEM THREE: LIBRARY (FOR LIBRARY USERS)</b>
DELL OPTIPLEX GX520 COMPUTER INTEL PENTIUM 4 PROCESSOR 550 3.4GHZ, 1MB CACHE, 800MHZ FSB MS WINDOWS XP PRO OPERATING SYSTEM 512MB DDR SDRAM MEMORY DELL 17" E173FP FLAT PANEL DISPLAY INTEGRATED VIDEO INTEL GMA 900 40GB SATA 7200 RPM HARD DRIVE 1.44MB 3.5" FLOPPY DRIVE, DELL USB KEYBOARD DELL USB 2 BUTTON ENTRY MOUSE WITH SCROLL INTEGRATED AUDIO CARD, INTERNAL DELL BUSINESS AUDIO SPEAKER 16X DVD+/-RW OPTICAL DRIVE MS OFFICE 2003 PRO SOFTWARE NORTON ANTIVIRUS 2006 APC BACKUPS 650VA UPS, P/N BK650EI	DELL OPTIPLEX GX520 COMPUTER INTEL PENTIUM 4 PROCESSOR 550 3.4GHZ, 1MB CACHE, 800MHZ FSB MS WINDOWS XP PRO OPERATING SYSTEM 512MB DDR SDRAM MEMORY DELL 17" E173FP FLAT PANEL DISPLAY INTEGRATED VIDEO INTEL GMA 900 40GB SATA 7200 RPM HARD DRIVE 1.44MB 3.5" FLOPPY DRIVE, DELL USB KEYBOARD DELL USB 2 BUTTON ENTRY MOUSE WITH SCROLL INTEGRATED AUDIO CARD, INTERNAL DELL BUSINESS AUDIO SPEAKER 16X DVD+/-RW OPTICAL DRIVE MS OFFICE 2003 PRO SOFTWARE NORTON ANTIVIRUS 2006 APC BACKUPS 650VA UPS, P/N BK650EI	DELL OPTIPLEX GX520 COMPUTER INTEL PENTIUM 4 PROCESSOR 550 3.4GHZ, 1MB CACHE, 800MHZ FSB MS WINDOWS XP PRO OPERATING SYSTEM 512MB DDR SDRAM MEMORY DELL 17" E173FP FLAT PANEL DISPLAY INTEGRATED VIDEO INTEL GMA 900 40GB SATA 7200 RPM HARD DRIVE 1.44MB 3.5" FLOPPY DRIVE, DELL USB KEYBOARD DELL USB 2 BUTTON ENTRY MOUSE WITH SCROLL INTEGRATED AUDIO CARD, INTERNAL DELL BUSINESS AUDIO SPEAKER 16X DVD+/-RW OPTICAL DRIVE MS OFFICE 2003 PRO SOFTWARE NORTON ANTIVIRUS 2006 APC BACKUPS 650VA UPS, P/N BK650EI
HP LASERJET 1320 PRINTER, 20 PPM, 1200DPI, LGL, PARALLEL INTERFACE AND CABLE, 220 VOLT	HP LASERJET 1320 PRINTER, 20 PPM, 1200DPI, LGL, PARALLEL INTERFACE AND CABLE, 220 VOLT	
	HP SCANJET 5590 FLATBED COLOR SCANNER, DUPLEXING, 50-SHEET AUTOMATIC DOCUMENT FEEDER, 2400X2400, 48BIT, USB2, P/N L1910A	

**NOTES:**

1. ALGREIA- Will receive only system one and system two since they did not participate in the Marine Information Management training course.
2. ANGOLA- Will receive only system one and system two since they did not participate in the Marine Information Management training course.
3. CONGO - Will receive only system one and system two since they did not participate in the Marine Information Management training course.
4. EGYPT- Will receive systems one, two and three
5. NAMIBIA - Will receive systems one, two and three
6. MAURITANIA- Will receive system three only for development of African Ocean Portal



### **3.2 ODINAFRICA Data Management training course (14-29 April 2005).**

The training course was held at the IODE Project Office and attended by data centre managers from the countries that have joined ODINAFRICA in the current phase (Angola, Algeria, Congo, Egypt and Namibia), and also those from institutions from the previous phase that required fresh training (Cameroon, Cote d'Ivoire, Gabon, Guinea, Morocco, and Seychelles). The course contents included: (i) Computer Basics, (ii) Internet Basics, (iii) Information, Data and Metadata, (iv) Introduction to Oceanography, (v) Introduction to Ocean Data, (vi) Ocean Data Collection Management, and (vii) Ocean Data Products and Synthesis.

There continues to be problems with Cote d'Ivoire and Guinea. In both instances the data managers claim that they have no access to PCs and internet connection.

### **3.3 Advanced Data Management Training course (2-6 October 2006)**

The OceanTeacher training package and resource kit has changed substantially in the last two years. It is therefore necessary to provide a refresher course for ODINAFRICA data managers who did not attend the data management training course in 2005, and introduce them to the improvements that have been included in the new version of OceanTeacher. The advanced course will target data managers from most of the institutions that participated in the second phase of ODINAFRICA.

### **3.4 ODINAFRICA Marine Information Management training course (14 August- 3 September 2005).**

The ODINAFRICA Marine Information Management training course was held at the IODE Project Office and attended by participants from Egypt, Gabon, Madagascar, Namibia, Nigeria, and UNESCO Nairobi. Participants from Algeria, Cote d'Ivoire and Guinea were invited but did not attend for various reasons.

The course contents included: Establishing the Need; Strategic Plan- Mission, Goals, Budget, Staff; Info Concepts includes hardware/software, storage; User Services; Collection Development; Cataloging- theory and systems; Integrated Library Catalogs; Cataloging in practice; Information Seeking in Electronic Environment; Electronic Resources General and in Marine Sciences (Ocean portal); E-Journals available for ODINAFRICA and in general; Presentation Skills; Information Skills Training; Document management; Continuing Professional Development- Develop Connections; AFRIAMSLIC, other Oceanteacher and Data Managers/Partners in Service.

The new countries that participated in the MIM course received the INMAGIC software, while the other countries received INMAGIC upgrades from version 5 to version 8. Further upgrades should depend on the usage of the licences by the institutions.

### **3.5 ODINAFRICA Marine Biodiversity Data Management training courses.**

The first ODINAFRICA Marine Biodiversity data management course was held in French at the IODE Project Office, Ostend, Belgium from 18-22 April 2005, while the second training course was held in English at the Verandah Hotel, Mauritius from 22-26 August 2005. Congo, Mozambique and South Africa did not send participants to the courses.

The course contents included: (i) Introduction to Access, (ii) Access Metadatabases, (iii) Introduction to OBIS, GBIF and othe major metadatabases, (iv) Access Biodiversity

databases, (v) Importing, exporting and entering data in access, (vi) Problems of biodiversity data –formats and codes, (vii) Representation of taxonomic hierarchy and synonymy-implementation in access, (viii) Introduction to XML: Darwin core, OBIS and ABCD federation schemas, (ix) Installing MSDE: porting application to MSDE, (x) Diversity of biodiversity issues: from definition to conservation, (xi) Introduction to taxonomy and systematics, (xii) Advanced nomenclature, (xiii) Installing Apache and php: creating vww, (xiv) Installing DiGIR, customizing XML, and (xv) Demonstration of portal applications.

### **3.6 Development of meta databases**

In an initiative to improve the quality of the collection of meta databases developed by ODINAFRICA data centres, two managers of data centres were commissioned to assess the quality of the databases. The aim of the initiative was to: (i) Review the metadata records collected from ODINAFRICA Data centers in both electronic and hard copy format, (ii) Reformat, quality control, and enter the metadata records into the MEDI Africa database, and (iii) Advise on any additional information that may be required from the Odinafrica national Data centers to ensure that the records submitted are complete.

The quality control performed included check on the agreement between information provided in the title and the summary of the record and the other fields information such as the measured parameters, the sensor name, the unit, the distribution format, etc. A quality control between records was also performed to avoid information redundancy, often noticed in the submitted records. The mandatory fields required for metadata edition were often subject to additional requests, in the case they are not furnished within the submitted material.

The total number of records in MEDI Africa at the end of the exercise was 286, an increase of 55%. The records per country were: Angola (4), Benin (21), Comoros (2), Cote d'ivoire (1), Gabon (7), Ghana (19), Guinea (44), Kenya (30), Madagascar (19), Mauritania (17), Mauritius (11), Mozambique (9), Namibia (1), Nigeria (22), Senegal (27), Tanzania (18), Togo (18), Tunisia (16)

Some technical problems are encountered during the edition phase, some of them are related to the exportation of data from the IOC server (i.e. some records are missed in the selected package of records to export) and others come from the MEDI software.

### **3.7 Development of AFRILIB**

The catalogue of library holdings developed by ODINAFRICA librarians were collected and their quality checked . The objective was to identify errors and make necessary corrections and advise the relevant librarians.

The exercise revealed that: (i) cataloguing rules in the Guidelines for entries to ODINAFRICA Libraries catalogues were not always followed, in some cases this was because the cataloguing was not done by the information managers themselves, (ii) difficulties in managing the structure of the databases in some institutions (Togo, Tunisia, Cote d'ivoire), (iii) lack competence in handling the use of Importing and Exporting applications of Inmagic; yet this process is required to exchange data or submit databases, and (iv) irregular input into the databases.

*The Project Management Committee recommended that a better name/acronym be found for AFRILIB, which will reflect the contents of the database. Good progress has been made in developing a web-interface for ODINAFRICA.*

*The ODINAFRICA Project Management Committee agreed that Performance Indicators should be developed for assessing each of the ODINAFRICA NODCs ahead of the ODINAFRICA Project Seminar in April 2006. This should include: website for the NODC, brochure, mailing lists, datasets linked to the website, (records for MEDI, AFRIDIR, AFRILIB, ODINPUBAFRICA and AFRIPUB), and digitised data sets. The starting point for this would be to compile information from the various questionnaires that have been completed by the institutions over the last two years. Templates for self assessment (containing the available information) will be sent to the ODINAFRICA institutions to complete and submit by end of February 2006.*

#### **4. REVIEW OF WP4: PRODUCT DEVELOPMENT AND DISSEMINATION.**

The objectives of the work package are to: (i) identify the users of the services and products offered by the ODINAFRICA data centres and their requirements, (ii) develop a programme of services and products that would serve these requirements, and (iii) develop the mechanisms to disseminate the outputs of the project to target groups.

Funds have provided to the countries participating in ODINAFRICA-3 to hold national consultation workshops on data and information products necessary for ICAM. The reports of national consultation meetings were collated to identify priority themes that should be addressed by the participating institutions jointly. The products identified during the national consultations very similar to those that are required for the core themes of the Africa Process. The following were the priority themes that re-currend in many of the national reports:

- Shoreline changes
- Critical habitats
- Storm Surges and Coastal flooding
- Biodiversity

*The Project Management Committee noted that three types of products have been identified by the national consultation workshops. These are (a) databases/atlasses, (b) trends (eg population of cities along the coastline, fisheries, or evolution of shorelines), and (c) scenario development (e.g. impact of a 20cm rise in sea level, impact of oil spill, impact of reduction in flow of main rivers on coastal areas). The Committee emphasised the need to focus on a limited number of products and services, and develop capacity that will be required to prepare and disseminate them, rather than stretching the limited resources available.*

Integrated Management of Coastal Areas depends on collaboration between different organisations at the national level. Two models are widely used to ensure this:

- Coordinating unit within a ministry, or
- Coordinating Committee bringing together different organisations.

In order to be effective, the ODINAFRICA data centres need to respond to demands of the user communities rather than defining the demand. The products developed should respond to

management objectives. NODCs should provide the linkages between the different ICAM players in their respective countries. It is therefore important to have an inventory of the institutions dealing with ICAM in each country, mandates of each institution, what (data and products) it requires to achieve its mandate, and what major projects/initiatives they participate in. Some of this information is available in the reports of the National ICAM Consultations. The priority should be compiling this information for each of the participating countries. This will be done in collaboration with NEPAD which will also be undertaking a survey of capacity available in marine related institutions in Africa.

*The Committee also emphasised the need to collect together ICAM Guidelines and Manuals and avail them to users. This will be done within the framework of the project for development of "Electronic Repository of Marine Related Publications from Africa-ODINpubAfrica".*

#### **4.1 Development of Marine Biodiversity Databases**

Participants in the Marine Biodiversity Data management courses held in Ostend, Belgium (April 2005), and Mauritius (August 2005) emphasised the need to immediately commence preparation of inventories of experts, datasets, institutions, and species lists. This information can be extracted from existing databases such as AFRILIB, MEDI Africa, and AFRIDIR. The MEDI Africa database should also be updated with the biodiversity information collected. It was emphasized that the Marine Biodiversity databases must operate within the framework of the National Oceanography Data and Information Centres (NODCs) and will not be provided with funds/equipment outside this framework. Asha Poonyth (Mauritius) and Malika Bel Hassen (Tunisia) were nominated as coordinators for Eastern/Southern Africa and Western/Northern Africa respectively.

Five workshops, each lasting 2-weeks will be organized to compile input for the OBIS system on taxonomic groups of particular importance [data entry]. Data sources (databases, publications) should be identified on beforehand, and made available during the workshop. The priority groups, identified on the basis of commercial importance, were: mollusks, polychaetes, echinoderms, sponges, stony corals. The first workshop (on molluscs) will be held 13-23 March 2006, at the IODE Project Office.

*The Management Committee agreed with this approach. However in view of the limited funding available, only three workshops will be funded from the ODINAFRICA budget. The Committee further recommended that the databases developed be included in the ODINAFRICA Marine Atlases, and that the data be re-organised in terms of LMEs for publication.*

#### **4.2 Development of Regional Marine Atlases.**

*The ODINAFRICA Project Management Committee agreed that the main focus for the current phase should be the development of Marine Atlases. These will be prepared for three regions (i) Western Indian Ocean (Agulhas, Somali LMEs and the Mascarenhas), (ii) Western Atlantic (Guinea Current and Benguela Current LMEs), and (iii) the Canary LME and Mediterranean Sea.*

These Atlases will incorporate existing geo-referenced datasets available in the public domain (but tailored to meet specific scope requirements), and also data products created from

national and international marine data collections by scientists participating in the ODINAFRICA program of capacity building projects. The Atlas projects, conducted in parallel, will consist of three phases: (1) Data mining to gather global, continental and national data according to an agreed-upon scope of topics, geographic limits and temporal considerations; (2) Conversion of the collected datasets into GIS-compatible forms and products; and (3) Documentation and compilation of the GIS resources into three well-organized, user-friendly digital Atlases that can be distributed as stand-alone resources within the wider community of marine and coastal scientists on the African continent. The specific activities to be implemented are:

1. *MINING WORKSHOP*. [June 5-16, 2006]

2 weeks of data mining by 3 selected LME Regional Leaders. Includes planning for the Coordination/Planning meeting to follow. Regional Leaders will be selected on the basis of expert capability in the use of GIS systems, familiarity with the marine & coastal data and data products of Africa, and general technical capabilities as demonstrated through their applications for this project

2. *COORDINATION/PROTOCOLS WORKSHOP*. 1 week. [June 19-23, 2006]

- a. Select product parameters for all GIS layers and specify protocols and procedures for working together on them
- b. Tools: ArcView (and possibly also SAGA)
- c. Tasks: Create LME-specific “cookbook” for products, documentation, formats, etc.
- d. Participants: Regional Leaders and up to 3 selected project scientists from each LME. Perhaps assisted by 1 or 2 regional GIS experts, as appropriate.
- e. Regional Leaders will be selected on the basis of capability in the use of GIS systems, familiarity with the marine & coastal data and data products of Africa, and general technical capabilities as demonstrated through their applications for this project; successful completion of an approved distance-learning program in GIS will also be considered as a demonstration of capability.

3. *PERFORMANCE*. [JULY-NOVEMBER 2006]

5 months of standard conversions and product-making, as directed in each LME by the responsible Regional Leader.

4. *ASSEMBLY WORKSHOP*. [November 27-December 1, 2006]

Regional Leaders and Project Scientists meet for a single, 1-week workshop to assemble their products into cohesive, well-organized and documented atlas structures with static HTML interface.

### **4.3 Implementation of ODINAFRICA Communication Plan**

A Communication Plan, outlining how the various the communication tools available through IOC projects implemented in Africa was endorsed by the Project Steering Committee. The plan will be implemented in collaboration with the secretariat for the Coastal and Marine sub-theme of NEPAD which provides the link to other initiatives in Africa.

The following is the focus of the communication tools:

- i) COMARNews: contains information and news on marine related activities from Africa, and especially be used to publisize the contents of the Africa Ocean Portal.
- ii) WINDOW: remains as the ODINAFRICA project newsletter focussing on project activities, and is published and distributed quarterly in electronic and version.
- iii) <http://ioc.unesco.org/odinafrica3>: is the ODINAFRICA Project Management site, targeting individuals and institutions participating in the project. It provides updates on implemented activities,
- iv) <http://www.odinafrica.org>: is the projects WINDOW to the world, giving information on the project and access to its services and products such as databases (directories of institutions and experts, catalogues of library holdings, marine related documents about/from Africa, catalogues of datasets and details of their location and accessibility) and services (document delivery services, .. ..)
- v) <http://www.africanoceans.net>: This is the African Ocean Portal through which users are able to access all sort of marine related information relevant to Africa- including links to useful sites, directories and catalogues.
- vi) African repository of marine related publications: Users are able to access marine related publications from Africa through this site

The ODINAFRICA posters and brochure will be revised, and the websites be improved to provide information on the project to users/potential users. A booklet providing details on project activities at national, sub-regional and continental level should also be published.

#### **4.4 ODINAFRICA Websites Improvement Project (OWIP)**

The ODINAFRICA Websites Improvement Project has been initiated to assist the webmasters in institutions participating in the project to improve the quality of their sites (or develop sites where these do not exist). This is in recognition of the key role that the internet should play as a medium for dissemination of project services and products The webmasters will attend a training workshop, and be provided with email support. The workshop covers the following topics: what is a website, different technologies of developing a website, HTML, Web editors, Front page, Improving graphical quality of your website, Uploading your HTML document on the server, African Ocean Portal (SIMPLIFY software), Application of skills learnt, OWIP distance learning, and Frequently asked questions and suggestions. The training materials and other details of OWIP are currently available at: [www.cndio-maroc.org/owip/](http://www.cndio-maroc.org/owip/)

ODINAFRICA project websites will also be reviewed and improved as they will serve as the focal point for the NODC sites. A web-server hosting the NODC sites has been acquired and installed at the IODE Project Office. The following domains will be registered for the ODINAFRICA NODC's:

**ODINAFRICA WEBSITES IMPROVEMENT PROJECT- PROPOSED DOMAIN NAMES**  
(target date 28 February 2006)

COUNTRY	INSTITUTION	PROPOSED DOMAIN	WEBMASTER
1. Algeria	ISMAL	1. www.nodc-algeria.org	Mr Mokhtar GUERFI
2. Angola	INAP	2. www.nodc-angola.org	Mr Bomba Bazik Sangolay
3. Benin	CBRST	3. www.nodc-benin.org	Mr Zacharie SOHOU-
4. Cameroon	IRAD	4. www.nodc-cameroon.org	Mr ESSOME KOUM G. Léopold
5. Comoros	CNDRS	5. www.nodc-comoros.org	Mr Ahmed Abdoukarim
6. Congo	IRD	6. www.nodc-congo.org	Mr Maloueki Lucien
7. Cote d'Ivoire	CRO	7. www.nodc-cotedivoire.org	Mr ASSEMIAN N. Clément
8. Egypt	NIOF	8. www.nodc-egypt.org	Mr Ahmed El Nemr
9. Gabon		9. www.nodc-gabon.org	Mr Magloir-Désiré MOUNGANGA
10. Ghana	MFRD	10. www.nodc-ghana.org	Mr Emmanuel Kwame DOVLO
11. Guinea	CERESCOR	11. www.nodc-guinea.org	Mr Mr Satigui Diakité
12. Kenya	KMFRI	12. www.nodc-kenya.org	Mr Samuel Ngete
13. Madagascar	IHSM	13. www.nodc-madagascar.org	Mr John Bemiasa
14. Mauritania	IMROP	14. www.nodc-mauritania.org	Mr Cheikh Sakho
15. Mauritius	MMS	15. www.nodc-mauritius.org	Mr Mohamudally BEEBEEJAUN
16. Morocco		16. www.nodc-morocco.org	Mr Hassan EL-OUIZGANI
17. Mozambique	INAHIAN	17. www.nodc-mozambique.org	Ms Clousa Maueua
18. Namibia	NATMIRC	18. www.nodc-namibia.org	Mr Josef Wedeinge
19. Nigeria	NIOMR	19. www.nodc-nigeria.org	Mr Larry Awosika
20. Senegal	CRODT	20. www.nodc-senegal.org	Mr Anis Diallo
21. Seychelles	SFA	21. www.nodc-seychelles.org	Mr. Richard Jasmin
22. Tanzania	IMS	22. www.nodc-tanzania.org	Dr. Desiderius C.P. MASALU
23. Togo	CGILE	23. www.nodc-togo.org	Mr Pessiezoum ADJOUSSE
24. Tunisia	INSTM	24. www.nodc-tunisia.org	Ms Fatma ZRIBI
25. OWIP site		25. www.odinafrica-owip.org	Mr Hassan EL OUIZGANI

## 5. ARRANGEMENTS FOR ODINAFRICA PROJECT SEMINARS

The Project Management Committee decided that the theme for the Second ODINAFRICA Conference (Symposium), 24-26 April 2006 would be: "Ocean Data and Information for Management and Development in Africa". The ODINAFRICA institutions will be invited to submit abstracts on the following topics:

- Topic 1: The Role of IODE Data Centres for Management of Marine and Coastal Areas
- Topic 2: Marine Libraries in Africa: New Technologies for Sharing Knowledge and Expertise.
- Topic 3: Reaching the Public: Generating Awareness about Marine and Coastal Issues
- Topic 4: Building a National Data Service: Challenges and Experiences.
- Topic 5: Development of Early Warning & Mitigation Systems for Tsunamis and other Marine Related Hazards

One paper will be selected from each topic for oral presentation during the symposium. Guest speakers will also be invited from related programmes such as UNECA, PIRATA, IOGOOS, IOTWS.

Performance indicators should be developed for assessing each of the ODINAFRICA NODCs ahead of the meeting. This should include: website for the NODC, brochure, mailinglists, datasets linked to the website, (records for MEDI, AFRIDIR, AFRILIB,

ODINPUBAFRICA and AFRIPUB), and digitised data sets. Templates for self assessment should be sent to the ODINAFRICA institutions.

The third symposium will be held in Africa (possibly Nairobi) in the second half of 2007.

## 6. REVISED WORK PLAN AND BUDGETS.

The Committee reviewed the work plan and budgets in view of the recommendations that had been made during the meeting. The table below reflects the

The total amount exceeds the available budget by USD50,600. This will be covered by trying to reduce costs under some budget lines, and collaboration with other programmes and projects in implementation of activities.

Work Package	2004	2005	2006	2007	TOTAL
WP1. Project Management and Coordination	49,600	115,300	108,700	108,700	382,300
WP2. The Coastal Observing System	-	92,000	341,000	147,000	580,000
WP3. Data and Information Management	80,540	466,560	189,000	103,000	839,100
WP4. Product Development, End-user Communication and Information Delivery	33,800	62,800	338,000	110,000	544,600
<b>SUB-TOTAL</b>	163,940	736,660	976,700	468,700	2,346,000
<b>Overhead UNESCO (10%)</b>	16,394	73,666	97,670	46,870	234,600
<b>GRAND TOTAL</b>	180,334	810,326	1,074,370	515,570	2,580,600

Details of the breakdown of budgets and activities are provided in the table on the next page.

## 7. CLOSING OF THE SESSION

The Session was closed by the ODINAFRICA Project Manager on Friday 3 February at 17h00.



**ODINAFRICA BUDGETS 2004-2007**

	2004	2005	2006	2007
<b>WORK PACKAGE 1- MAANGEMENT &amp; COORDINATION</b>				
Project Manager & Regional Coordinators	18,500	61,200	61,200	61,200
ODINAFRICA PMC & PSC meetings	21,100	28,700	20,000	20,000
Management costs PM and RCs	4,000	7,500	7,500	7,500
Management costs IOC	3,700	10,000	10,000	10,000
Occasional travel PM	2,300	7,900	10,000	10,000
<b>SUB-TOTALS</b>	<b>49,600</b>	<b>115,300</b>	<b>108,700</b>	<b>108,700</b>
<b>WORK PACKAGE 2- COASTAL OBSERVING SYSTEM</b>				
Procurement and configuration of tide gauges		80,000	180,000	-
Technician visits		12,000	27,000	-
Installation of tide gauges (including site visits)		-	70,000	14,000
Maintenance of tide gauges (visit by technician)			-	50,000
Oceanographic sensors (at selected sites)			-	10,000
Data transmission costs			6,000	12,000
Establishment sea level data centre.			5,000	-
Internship for ODINAFRICA experts at Sea level centre			15,000	30,000
Sea level training workshops (Nov 2006, and May 2007)			31,000	31,000
<b>SUB-TOTALS</b>		<b>92,000</b>	<b>341,000</b>	<b>147,000</b>
<b>WORK PACKAGE 3 DATA AND INFORMATION MANAGEMENT</b>				
Operational expenses data centres	12,800	42,000	44,000	33,000
Obtaining Hydrographic data sets	7,040	9,600	-	-
Equipment upgrade NODCs	12,800	13,300	-	-
Operational expenses information centres	12,000	42,000	44,000	33,000
Equipment upgrade information centres	12,800	13,300	-	-
Internet access	7,200	25,200	26,000	22,000
Mainstreaming OBIS	-	20,400	-	-
OBIS data management training course	-	102,500	-	-
Projects/Programmes databases (SEACAM)	-	3,000	-	-
Data management training course	-	81,500	40,000	-
PC equipment new countries and RCs	-	55,960	-	-
INMAGIC upgrades + new	15,900	9,600	-	-
MIM training course	-	30,400	-	-
Information Man Follow-up (AFRILIB, IAMSLIC, ICAM)	-	7,800	10,000	-
Data Man. Follow-up (IODE-XVIII, MEDI)	-	7,000	10,000	-
Interlibrary loan service/journals	-	3,000	15,000	15,000
<b>SUB-TOTALS</b>	<b>80,540</b>	<b>466,560</b>	<b>189,000</b>	<b>103,000</b>
<b>WORK PACKAGE 4 PRODUCTS DEVELOPMENT &amp; DISSEMINATION</b>				
National ICAM Consultations	28,000	9,000	-	-
WP4 rewriting workshop	-	-	20,000	-
Improvement of ODINAFRICA Websites	5,800	10,500	10,000	-
Collaboration (ABELOS, WIOMSA, IOTWS)	-	31,300	-	-
Leadership workshop support	-	12,000	-	-
Project Seminar (24-26 April 2006), 2007/8	-	-	114,000	80,000
Data mining workshop (5-16 June 2006)	-	-	20,000	-
Regional Atlas Consultation/protocols workshop	-	-	45,000	-
Regional Atlas Assembly workshop (27 nov-1 Dec06)	-	-	45,000	-
GIS distance course (ITC)	-	-	4,000	-
Atlas on line (3 data miners)- June 2007	--	-	-	10,000
Atlas published on CD, DVD- Feb 2007	-	-	-	-
Biodiversity workshop (Mar 2006, Oct.2006, Feb2007)	-	-	40,000	20,000
Biodiversity workshop 4. (May 2007, Oct 2007)	-	-	-	-
Second Websites workshop (Sep 2006).	-	-	40,000	-
<b>SUB-TOTALS</b>	<b>33,800</b>	<b>62,800</b>	<b>338,000</b>	<b>110,000</b>

\* It is assumed that GLOSS/IOTWS will contribute USD28,000 towards the organisation of the Sea level training courses



ANNEX I

**AGENDA**

8. OPENING
9. REVIEW OF WP2 COASTAL OBSERVATIONS
10. REVIEW OF WP3 DATA AND INFORMATION MANAGEMENT
11. REVIEW OF WP4: PRODUCTS DEVELOPMENT AND  
DISSEMINATION
12. ARRANGEMENTS FOR ODINAFRICA PROJECT SEMINAR
13. ODINAFRICA WORK PLAN BUDGETS 2006-2007.
14. CLOSING



ANNEX II

**LIST OF PARTICIPANTS**

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# **INFORMATION REQUIRED FOR ODINAFRICA REGIONAL MARINE ATLAS PROJECT.**

## **1) Performance Information for the NODC/DNA**

Data Centre managers should assess their data centres on the basis of these performance indicators and report on how the centre performs against each indicator.

Please provide details for each indicator- (e.g. names, addresses, URLs, number of records in databases, URLs where necessary)

## **2) Data available at (or can be accessed by) the NODC (Generic List of Coastal/Marine Atlas parameters)**

Please provide details of formats of the data and dates for which data is available

## **3) Detailed list of socioeconomic (Quality of life) indicators**

For each parameter/indicator S (QL) 1 – S(QL) 8 (column 3) indicate how importance it is on a scale of 1-5 (where 1= not necessary, 2=maybe necessary, 3=necessary, 4=very necessary, and 5=absolutely necessary)

## **4) Detailed list of ecological indicators**

For each parameter/indicator E.1 – E.9 (column 3) indicate how importance it is on a scale of 1-5 (where 1= not necessary, 2=maybe necessary, 3=necessary, 4=very necessary, and 5=absolutely necessary)

## **5) Detailed list of governance performance indicators**

For each parameter/indicator G.1 – G.18 (column 3) indicate how importance it is on a scale of 1-5 (where 1= not necessary, 2=maybe necessary, 3=necessary, 4=very necessary, and 5=absolutely necessary)

## PERFORMANCE STANDARDS FOR IODE NODCS AND DNAS

1. Standing
  - a. Member of IOC and IODE
  - b. IODE National Coordinator has been designated (provide name, address)
  - c. Effective telephone and email communications established (provide details)
2. Organization
  - a. Formally designated as an NODC or DNA within the IODE (provide dates)
  - b. Head of NODC/DNA has been designated (provide name, address)
  - c. Effective telephone and email communications established (provide details)
3. Public Presence
  - a. Website specifically for the NODC/DNA has been published (provide URL)
  - b. Website includes logo-links to significant other IODE resources and sites
  - c. Website includes links to significant related agencies, institutions, organizations and data resources
  - d. Website includes concise, comprehensive description of the IODE and the NODC/DNA itself
  - e. Website includes description of all services provided by the NODC/DNA
  - f. Website includes catalog or listing of all data resources (the “national data collection”) held by the NODC/DNA
  - g. Website includes documented datasets (simple links or dynamic access)
  - h. Website includes data products and publications derived from these datasets
  - i. When available, website includes links to regional or continent-scale joint datasets and products
  - j. NODC/DNA provides a concise, comprehensive paper brochure or pamphlet describing itself, its services and resources
  - k. NODC/DNA has a mailing list of physical addresses for related agencies, institutions and organizations
  - l. NODC/DNA has an email list of related agencies, institutions, and organizations
  - m. NODC/DNA publicly states that it makes all its data holdings available to the public at no charge (or for a minimal charge based on the cost of reproduction)
4. Data Holdings
  - a. Within the national data collection, the NODC/DNA has created an assembly of ocean station data from the World Ocean Database and other sources
  - b. Within the national data collection, the NODC/DNA has assembled other types of data, as appropriate, based on formal and informal inquiries among the potential user community within the nation
  - c. NODC/DNA has identified and collected historical (usually hard-copy) datasets, when available
  - d. The NODC/DNA has digitized these historical data and included them in the national data collection
  - e. NODC/DNA has cataloged the national data collection with (DIF) metadata records, as produced by the MEDI software, for each major type of data or for each major data-producing activity, as appropriate. In the event of technical difficulties, as a minimum, the NODC/DNA has created MEDI-Lite spreadsheet records of these data collections. All MEDI/MEDI-Lite records contain appropriate measures of data quantity (e.g. number of stations/samples/parameters, length of record, number of specimens, etc.) to determine how much data is included.

5. Data Management
  - a. The NODC/DNA demonstrates familiarity with the data and skill in their use by performing a documented program of quality control.
  - b. The NODC/DNA demonstrates familiarity with the data and skill in their use by creating accurate, documented analysis products, including as a minimum those demonstrated in OceanTeacher.
6. Capacity Building
  - a. The NODC/DNA works to expand its capabilities by sending data managers to classes/workshops offered by the IODE
  - b. The data managers within the NODC/DNA demonstrate their personal capabilities by offering local training in all areas of data management to other workers
7. Infrastructure
  - a. The computer equipment of the NODC/DNA is located within the immediate working environment of the NODC/DNA manager
  - b. The NODC/DNA has direct access, through its own computer to the Internet
  - c. The Internet access is the fastest baud rate locally available
  - d. NODC/DNA website is located on a high-baud rate local server, or on the IODE Project Office server if no reliable, fast local server is available
  - e. NODC/DNA staff members all have individual (i.e. not joint/institutional) email addresses
  - f. All NODC/DNA computers have external backup devices capable of complete backup of all data
  - g. All NODC/DNA data are backed up at least weekly
  - h. All NODC/DNA computers have up-to-date anti-virus software programs installed and running in all available modes (i.e. including email scanning), and automatic virus definition updating services have been purchased and are active
  - i. All NODC/DNA computers are totally scanned at least bi-weekly for viruses
8. Communications
  - a. All hard-copy and email inquiries and requests are answered within the week of receipt (or sooner upon special request)
  - b. Email addresses of individuals are maintained as long as possible, and not abandoned unless absolutely required. Email lists are always notified in the event of an absolutely necessary change. The total number of email addresses for any individual is kept to an absolute minimum



## GENERIC LIST OF COASTAL/MARINE ATLAS PARAMETERS

1. Base map.
  - Coastline
  - Bathymetry & topography data – highest available resolution; gridded and vector
  - Geopolitical data
    - Land: Political boundaries and place names (e.g. town names); conservation areas.
    - Marine: Exclusive Economic Zone (EEZ) boundaries, treaty lines, military activity zones, dumping areas, navigational "fairways," vessel anchorages, offshore mineral leases, etc.
2. Geosphere data
  - Soils
  - Marine sediments
  - Hydrocarbons
  - Non-energy minerals
  - Geohazards
3. Biosphere data
  - Vegetation zones & types
  - General terrestrial & marine ecosystems
  - Endangered & threatened species
  - Reefs, mangroves, grassbeds
  - Biological oceanography
  - Fisheries oceanography
    - Catch (by port)
    - Catch/effort distribution and seasonal variation
    - Pelagic/demersal fish distribution
4. Hydrosphere data
  - Physical oceanography
    - Temperature, salinity, density
    - Currents
    - Waves
    - Sea level
  - General Hydrography
    - Nutrients – vertical, seasonal, etc.
    - Water Quality
  - Pigments & primary production
  - Detritus, plankton, particulate matter
  - Optical parameters
  - Water quality
  - Operational systems
5. Atmosphere data
  - Climate
    - Temperature
    - Precipitation
    - Winds
  - Weather
    - Basic weather patterns that typically affect the coastal ocean - seasons
    - Storm paths and frequencies
    - Maximum storm condition
  - Air Quality
6. Socio-economic data
  - Urban/rural populations, densities & boundaries
  - Human infrastructure – rail, highways, ports
  - Industry
    - Major sites
    - Discharges & other impacts
  - Coastal hospitality & tourism sector
  - Employment & finance

**DETAILED LIST OF SOCIOECONOMIC (QUALITY OF LIFE) INDICATORS**

<b>Goal</b>	<b>Objective</b>	<b>Indicators and parameters</b>	<b>Related Data Parameter</b>
<i>Maintaining or enhancing the quality of life</i>	<b>Economy:</b>  <b>Maximizing sustainable wealth generation and the reduction of poverty</b>	<b>S(QL).1 Total economic value</b> - Exploitation of living resources (commercial fisheries; artisanal fisheries; recreational fisheries) - Exploitation of non-living resources (oil and gas; minerals and metals) - Non-consumptive uses (shipping; tourism and eco-tourism) - Economic value-added - Value of exports - Management and administration costs	<b>Fisheries catch; Catch/effort distribution and seasonal variation; Hydrocarbons; Non-energy minerals; Human infrastructure – rail, highways, ports; Coastal hospitality &amp; tourism sector;</b>
		<b>S(QL).2 Total employment</b> - Number employed - Employment payroll value - Same sub-categories as total economic value	<b>Employment &amp; finance</b>
	<b>Environment:</b>  <b>Minimizing environmental degradation from human activity</b>	<b>S(QL).3 Sustainably managed exploitation and use</b> - Environmental assessments conducted - Fisheries with management plans	
		<b>S(QL).4 Pollutants and introductions</b> - Population served by wastewater treatment - Volume, number, and type of point-source discharges - Non-point-source nutrient loading (e.g., fertilizer use) - Discharged sediments and nutrients - Volume of ballast and bilge discharge - Litter and debris	<b>Water quality; Air quality; Major industry sites; Discharges &amp; other impacts</b>
		<b>S(QL).5 Habitat alteration</b> - Land use/land cover patterns and composition - Population density - Extent of hard-surface areas - High-impact fishing gear/practices - Dumped and dredged material (e.g., shipping channel maintenance)	<b>Dumping areas; Fairways and anchorages</b>
	<b>Society:</b>  <b>Protecting human life, public and private property, and establishing or maintaining equitable population dynamics</b>	<b>S(QL).6 Disease and illness</b> - Fecal chloroform counts - Days of beach closure - Extent of contaminated species - Extent of contaminated water - Seafood-vectored illnesses	<b>Water quality</b>
		<b>S(QL).7 Weather and disaster</b> - Economic value of loss from marine weather-related events - Lives lost from weather and marine disasters	<b>Geohazards</b>
		<b>S(QL).8 Population dynamics</b> - Degree of public access - Resident and total (seasonal) population - Marine attachment	

## DETAILED LIST OF ECOLOGICAL INDICATORS

Goal	Objective	Indicator (and parameters)	Related Data Parameter
Maintaining ecosystem health	<b>Organization :</b>  <b>Maintaining ecosystem structure</b>	<b>E.1 Diversity</b> - Diversity of communities - Diversity of populations - Diversity of species - Genetic diversity - Invasive species/pests	Vegetation zones & types; General terrestrial & marine ecosystems; Endangered & threatened species; Reefs, mangroves, grassbeds
		<b>E.2 Distribution</b> - Horizontal distribution (patchiness, aggregation) - Vertical distribution (food web/trophic structure)	
		<b>E.3 Abundance</b> - Biomass (key populations) - Number of individuals (marine mammals) - Density (plants, benthic org.)	
	<b>Vigor:</b>  <b>Maintaining ecosystem function</b>	<b>E.4 Production and reproduction</b> - Primary productivity: quantity (biomass) and quality (e.g. Harmful algal blooms) - Secondary productivity - Life-stage history - Reproductive parameters - Spawning survival rates (survivorship) - Mean generation time (longevity)	Pigments & primary production; Nutrients; Water quality; Detritus, plankton, particulate matter; Biological oceanography; Fisheries catch; Fish distributions
		<b>E.5 Trophic interactions</b> - Complexity of food web - Key predator/prey interactions - Keystone species - Size spectra	
		<b>E.6 Mortality</b> - Fishing mortality - Incidental mortalities (by-catch) - Natural mortality (predation)	
	<b>Quality:</b>  <b>Maintaining physical and chemical properties</b>	<b>E.7 Species health</b> - Species at-risk of extinction - (Bio)accumulation of toxic compounds - Diseases and abnormalities - Seafood quality	<b>Temperature, salinity, density; Currents; Waves; Sea level; Nutrients; Water quality; Optical parameters; Pigments &amp; primary production; Detritus, plankton, particulate matter; Marine sediments; endangered &amp; threatened species; Detritus, plankton, particulate matter</b>
		<b>E.8 Water quality</b> - Water column properties - Oceanographic processes & variability (and regime shifts) - Sedimentation (e.g. Transport of suspended sediments) - Pollutants and contaminants - Eutrophication parameters	
		<b>E.9 Habitat quality</b> - Habitat types - Habitat alteration - Sea level change - Landscape and bottomscape integrity - Sediment quality (nature/properties of sediments)	



## DETAILED LIST OF GOVERNANCE PERFORMANCE INDICATORS

Goal	Objective	Indicator and parameters	Related Data Parameters
Ensuring adequate institutional, policy and legal arrangements	Ensuring the coordination and coherence of administrative actors and policies	Definition of functions of administrative actors <ul style="list-style-type: none"> <li>– ICOM functions of administrative actors clearly defined by legislation or administrative acts</li> <li>– New agencies for ICOM established</li> <li>– Primary responsibility for ICOM mandated to a single agency</li> </ul>	
		Policy goals and objectives and strategies for ICOM <ul style="list-style-type: none"> <li>– Policy goals and quantifiable objectives for ICOM formally adopted</li> <li>– Strategies and procedures for the implementation of the ICOM objectives developed and formally adopted, including incorporation of ICOM principles into sectoral instruments</li> </ul>	
		G.1 Existence and functioning of a representative coordinating mechanism for ICOM <ul style="list-style-type: none"> <li>– Existence of a coordinating mechanism</li> <li>– Functioning of the coordinating mechanism</li> <li>– Outcomes and influence of the coordinating mechanism</li> </ul>	
	Supporting integrated management through adequate legislation and regulations <ul style="list-style-type: none"> <li>– Existence of legislation on coastal and marine resources</li> <li>– Adequacy of the ICOM legislation</li> </ul>		
	Assessing the environmental impacts of policies, plans, programs, and projects <ul style="list-style-type: none"> <li>– Use of EIA and SEA procedures and modifications to coastal projects</li> <li>– Use of CCA procedures in coastal tourism development</li> </ul>		
	Resolving conflicts over coastal space and resources <ul style="list-style-type: none"> <li>– Stakeholders and issues at stake</li> <li>– Agreed procedures and mechanisms for conflicts resolution</li> <li>– Changes in the proportion of conflicts that are mitigated, resolved, or prevented</li> <li>– Overall changes in the number of conflicts</li> </ul>		

Goal	Objective	Indicator and parameters	Related Data Parameters
Ensuring adequate management processes and implementation	Managing the coastline through integrated plans	G.5 Existence, status, and coverage of ICOM plans <ul style="list-style-type: none"> <li>– Existence and status of ICOM plans</li> <li>– Characteristics of ICOM plans</li> <li>– Extent (percentage) of coastline covered by ICOM plans</li> </ul>	National boundaries Sub-national boundaries Land gazetteer (place names) Ocean gazetteer (ditto) Undersea gazetteer EEZ boundaries Mineral lease boundaries Offshore structures Pipelines and other utilities Fishing zones Shipping fairways & anchorages Military or other restricted area boundaries Marine protected area boundaries Parks and reserves boundaries Offshore dumping areas Onshore hazardous waste disposal areas
	Managing coastal watersheds through integrated plans	Existence, status, and coverage of watershed plans <ul style="list-style-type: none"> <li>– Existence and status of watershed plans</li> <li>– Characteristics of watershed plans</li> <li>– Extent (percentage) of watershed area covered by ICOM plans</li> </ul>	
	Conserving coastal and marine biodiversity through management plans	Existence, status, and coverage of management plans for coastal and marine ecosystems <ul style="list-style-type: none"> <li>– Existence and status of coastal/marine ecosystem-based management plans</li> <li>– Characteristics of ecosystem-based management plans</li> <li>– Extent (percentage) of coastal/marine ecosystems covered by management plans</li> </ul>	
	Implementing and enforcing ICOM plans and actions	G.6 Active management in areas covered by ICOM plans <ul style="list-style-type: none"> <li>– Level of implementation of ICOM plans, actions and projects, including infrastructure building</li> <li>– Procedures, legal tools, and monitoring and sanctioning applied for enforcement of ICOM plans/actions</li> <li>– Level of compliance with ICOM plans</li> </ul>	
	Routinely monitoring, evaluating and adjusting ICOM efforts	G.7 Routine monitoring, evaluation, and adjustment of ICOM initiatives <ul style="list-style-type: none"> <li>– Existence of an operational monitoring and evaluation system with related indicators</li> <li>– Consideration of results into ICOM initiatives</li> <li>– Adjustments made to ICOM initiatives</li> </ul>	
	Supporting ICOM through sustained administrative resources	G.8 Sustained availability and allocation of human, technical, and financial resources for ICOM, including the leverage of additional resources <ul style="list-style-type: none"> <li>– Staff</li> <li>– Budget</li> <li>– Facilities</li> </ul>	

Goal	Objective	Indicator and parameters	Related Data Parameters
Enhancing information, knowledge, awareness, and participation	Ensuring that management decisions are better informed from science	G.9 Existence, dissemination, and application of ICOM-related scientific research and information <ul style="list-style-type: none"> <li>– Existence of research studies and scientific publications</li> <li>– Completion of a diagnostic assessment that identifies root causes of coastal degradation and establishes priority for interventions</li> <li>– Existence and dissemination of a state of the coast report</li> <li>– Existence and functioning of a science advisory body</li> <li>– Existence and operation of routine monitoring of the marine environment</li> <li>– Inputs from scientific research and diagnostic assessment into ICOM</li> </ul>	
	Improving awareness on coastal issues	Dissemination of information on coastal issues to the public <ul style="list-style-type: none"> <li>– Section on the coastal and marine environment in a regularly published state of the environment report or separate state of the coast report</li> <li>– Media events covering coastal issues held</li> </ul>	
	Ensuring sustained support from engaged stakeholders	G.10 Level of stakeholder participation in, and satisfaction with, ICOM decision-making processes <ul style="list-style-type: none"> <li>– Level of stakeholder participation</li> <li>– Level of stakeholder satisfaction with participation and with ICOM outcomes</li> </ul>	
	Supporting ICOM through partnerships	Establishment of partnerships and steering groups <ul style="list-style-type: none"> <li>– Number of functional public-private partnerships created</li> <li>– Number of ICOM-related projects initiated as a result of partnerships</li> </ul>	
	Ensuring NGO and community involvement	G.11 Existence and activity level of NGOs and community organizations supportive of ICOM <ul style="list-style-type: none"> <li>– Existence and characteristics of NGOs and community organizations active in ICOM</li> <li>– Level of activity of NGOs and community organizations active in ICOM</li> </ul>	
	Ensuring adequate levels of higher education and professional preparation for ICOM	G.12 Incorporation of ICOM into educational and training curricula and formation of ICOM cadres <ul style="list-style-type: none"> <li>– Educational and training programs incorporating ICOM</li> <li>– People having completed educational and training programs in ICOM</li> <li>– Employment of people with education and training in ICOM</li> </ul>	

Goal	Objective	Indicator and parameters	Related Data Parameters
Mainstreaming ICOM into sustainable development Economic instruments Mainstreaming	Enabling and supporting ICOM through technology, including environmentally friendly technology	G.13 Use of technology, including environmentally friendly technology, to enable and support ICOM <ul style="list-style-type: none"> <li>– Availability of ICOM-enabling and supporting technology at an acceptable cost</li> <li>– Level of use of ICOM-enabling and supporting technology in substitution of counter-ICZM technology</li> <li>– Level of coordination of ICZM-enabling and supporting technology</li> </ul>	
	Incorporating economic instruments into coastal management policies	G.14 Use of economic instruments in support to ICOM <ul style="list-style-type: none"> <li>– Availability of economic instruments, including environmental quality certifications, in conjunction with regulatory instruments</li> <li>– Level of implementation and enforcement of economic instruments</li> </ul>	
	Mainstreaming coastal and ocean management into sustainable development	G.15 Incorporation of ICOM into sustainable development strategy <ul style="list-style-type: none"> <li>– Existence of sustainable development strategy or Agenda 21 incorporating ICOM chapter</li> <li>– Level of implementation of ICOM chapter of sustainable development strategy or Agenda 21</li> </ul>	
Enhancing the international dimension of ICOM	Enhancing ICOM by implementing international recommendations and guidance	International recommendations and guidelines on ICOM influencing the ICOM process <ul style="list-style-type: none"> <li>– Awareness of international recommendations and guidelines on ICOM</li> <li>– ICOM decisions influenced by international recommendations and guidelines</li> </ul>	
	Enhancing ICOM through involvement in international cooperative initiatives	Participation in international efforts related to ICOM and influence on the ICOM process <ul style="list-style-type: none"> <li>– Active participation in international agreements and cooperative efforts in ICOM such as transboundary or multinational projects</li> <li>– Influence of such involvement on the ICOM process</li> </ul>	
	Enabling ICOM through implementation of international agreements	Ratification and implementing legislation for international agreements relevant to ICOM <ul style="list-style-type: none"> <li>– Ratio between agreements ratified and legislated for</li> </ul>	



ANNEX IV  
ODINAFRICA MEETINGS AND TRAINING COURSES SCHEDULE

**February 2006.**

w	T	f	S	s	m	t	w	t	f	S	s	m	t	w	t	f	S	s	m	t	W	t	f	s	s	m	t
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28

ODINAFRICA Management meeting (continued)

**March 2006.**

w	T	f	S	s	m	t	w	t	f	s	s	m	t	w	t	f	S	s	m	t	W	t	f	s	s	m	t	w	t	f
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Marine Biodiversity data compilation (Molluscs)

**April 2006.**

s	S	m	T	w	t	f	s	s	m	t	w	t	f	s	s	m	T	w	t	f	S	s	m	t	w	t	f	s	s
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Second ODINAFRICA Seminar (60pax)  
ODINAFRICA PSC-PMC meeting (12pax)

**June 2006.**

t	f	s	s	m	t	w	t	f	s	s	m	T	w	t	f	S	s	m	t	w	t	f	s	s	m	t	w	t	f
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Atlas Data Mining workshop -3pax  
Atlas Coordination and protocols workshop

**September 2006.**

f	S	s	M	t	w	t	f	s	s	m	t	w	t	f	s	s	M	t	w	t	F	s	s	m	t	w	t	f	s
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30

Marine Librarians workshop (TO CONFIRM)  
Websites Improvement workshop

**October 2006.**

s	M	t	W	t	f	s	s	m	t	w	t	f	s	s	m	t	W	t	f	s	S	m	t	w	t	f	s	s	m	t
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31

Advanced Data Management training course  
Marine Biodiversity data compilation (sponges?)

**November 2006.**

w	T	f	s	s	m	t	w	t	f	s	s	m	t	w	t	f	S	s	m	t	W	t	f	s	s	m	t	w	t	f
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1

Atlas Assembly workshop  
Sea level workshop



## ANNEX V: Second ODINAFRICA Seminar

“Ocean Data and Information for Management and Development in Africa”

24-26 April, 2006 IODE Project Office, Ostend, Belgium

### PROVISIONAL TIME TABLE

Monday, 24 April 2006

10:00- 11:00	Official Opening Implementation Status of ODINAFRICA-III
11:00-11:30	Tea/Coffee Break
11:30- 13:00	Invited presentations on the following themes <b>(ABSTRACTS SHOULD BE SUBMITTED BY 28 FEBRUARY 2006)</b>
	<ul style="list-style-type: none"><li>▪ The Role of IODE Data Centres for Management of Marine and Coastal Areas</li><li>▪ Marine Libraries in Africa: New Technologies for Sharing Knowledge and Expertise.</li><li>▪ Reaching the Public: Generating Awareness about Marine and Coastal Issues</li><li>▪ Building a National Data Service: Challenges and Experiences.</li><li>▪ Development of Early Warning &amp; Mitigation Systems for Tsunamis and other Marine Related Hazards</li></ul>
13:00-14:00	Lunch
14:00-15:30	Guest presentations: <i>(TO BE INVITED: BCLME, GCLME, ASLME, PIRATA, IOGOOS, IOTWS, UNECA)</i>
15:30-16:00	Tea/Coffee Break
16:00-17:30	Guest presentations (continued)

Tuesday, 25 April 2006

09:00- 11:00	ODINAFRICA Country Reports (Algeria, Angola, Benin, Cameroon, Comoro, Congo, Cote d'Ivoire, Egypt)
11:00-11:30	Tea/Coffee Break
11:30-13:00	ODINAFRICA Country Reports (Gabon, Ghana, Guinea, Kenya, Madagascar, Mauritania)
13:00-14:00	Lunch
14:00-15:30	ODINAFRICA Country Reports (Mauritius, Morocco, Mozambique, Namibia, Senegal, Seychelles)
15:30-16:00	Tea/Coffee Break
16:00-17:30	ODINAFRICA Country Reports (South Africa, Tanzania, Togo, Tunisia)
18:00-	WORKING GROUP MEETINGS.

Wednesday, 26 April 2006

09:00- 11:00	Review of ODINAFRICA Products and Services
11:00-11:30	Tea/Coffee Break
11:30-13:00	Working Group Reports
13:00-14:00	Lunch
14:00-15:30	Way Forward
15:30-16:00	Tea/Coffee Break
16:00-17:30	Way Forward CLOSURE



## **ANNEX VI (a)**

### **COLLABORATIVE ACTIVITIES IN WHICH ODINAFRICA-III HAS PARTICIPATED.**

#### **1. AFRICAN OCEAN PORTAL ([www.africanoceans.net](http://www.africanoceans.net))**

ODINAFRICA has contributed actively to the development of the African Ocean Portal which was initiated through the UNESCO/IOC OceanPortals project started in May 2002, and supported under the cross cutting theme “The contribution of information and communication technologies to the development of education, science and culture and the construction of the knowledge society”.

The portal provides access to information and data on all aspects of ocean/coastal research and management related to Africa for the benefit of various communities such as decision makers, the private sector, the research and education community and the general public.

The portal has demonstrated that despite the ‘digital divide’ expertise and enthusiasm exist in Africa and to develop and maintain OceanPortals as a wide-scoped information resource for many layers of society. It has laid solid foundations for a long-term initiative that will bring research and management closer to the public. Translating content from ‘scientific language’ into ‘public language’ is often a problem for the editors who all have a scientific background. This has been addressed by recruiting a journalist as content editors so that they can assist in bridging the divide.

Substantial amount of information has been included in the portal or linked to it. This enables users to access a wide range of information, data and sources for their work. Poor internet access in some of the countries limited the ability of some content editors to submit materials. However the installation of VSAT links at IHSM in Madagascar, and the Nigerian Institute of Oceanography and Marine Research (NIOMR) improved the access in these countries and enabled the editors to be more effective.

The linkage with the Coastal and Marine sub-theme of NEPAD (NEPAD/COSMAR) provides an opportunity to broaden the reach of the portal, by accessing key players in the field of marine resource management and research in Africa. The African Ocean Portal editors produce a quarterly newsletter “COSMARNews” jointly with NEPAD/COSMAR. The newsletter highlights relevant marine issues and provides a pointer to information in the portal.

The funding for the African Ocean Portal through UNESCO Cross-Cutting initiatives was extended for the 2006/2007 biennium.

#### **2. REPOSITORY OF MARINE RELATED PUBLICATIONS FROM/ABOUT AFRICA (ODINPUBAFRICA)**

The program OdinPubAfrica is funded by the government of Flanders for implementation in the period August 2004 to August 2006. It is focussing on the development of an electronic repository to make publications in marine science from scientists affiliated to ODINAFRICA institutes electronically available. It also helps to preserve those publications. Preliminary results are available at the website: see <http://iodeweb1.vliz.be/odin/>. The first training course on development of Electronic repositories was held at the Hasselt University in February 2005, and a second one in December 2005 at the IODE Project Office. The libraries (and librarians) of institutions participating in ODINAFRICA are playing the lead role in developing the repository.

The following are some of the benefits we expect from the repository:

- Make scientific publications of ODINAFRICA institutes more easily and freely accessible to the African region research and management community. This will enhance internal scientific communication.
- Facilitate publishing of research findings by African scientists thereby promoting African research and increasing access by African scientists to the international research forum.

- Increase the profile and status of the research and that of the institution
- Preserve and maintain research output for the future generations
- Facilitate more timely access to research
- Increase citation
- Links to projects and web pages

The repository will cover ONLY contents of authors working in an ODINAFRICA affiliated institution, and will include: (i) Articles, Scientific reports, Technical reports, Theses, Conference papers, Grey literature, and preprints.

The program involves librarians, researchers and directors. The creation of a repository for an institute and for each researcher is a very important task in the present world of scientific communication. It is of great importance to the visibility of scientific work of an individual, an institution and hence an entire country.

### **3. REGIONAL TRAINING COURSE ON APPLICATION OF SATELLITE ALTIMETRY TO OCEANOGRAPHY**

The training course held at the San Marco Research Centre (*also known as Luigi Broglio Space Center*), Malindi, Kenya) from 6-17 September 2004 was attended by eight trainees, mainly from ODINAFRICA institutions in Kenya, Madagascar, Mauritius, Mozambique, and Tanzania.

The training course was intensive and comprised lectures, practical exercises and demos, and discussion sessions. The following topics were covered:

- Principle of satellite altimetry and applications to sea level studies
- Ocean circulations/currents and eddies from altimetry
- Marine gravity and geoid from multi-satellite altimetry and applications
- Altimeter waveform tracking for land/ocean use
- Bathymetric estimation from altimetry
- Improved methods/theories of altimeter data processing
- Inland sea/lake monitoring using altimetry
- Operational oceanography using altimetry

Though Altimetry and the BILKO software formed the core of the course and practical exercises, other sensors and software (eg ENVI) were also presented to enable participants to compare and appreciate the possibilities available in remote sensing. Participants also made presentations on the remote sensing related work that they or their respective institutions are involved in. The course was sponsored by the (i) Western Indian Ocean Marine Science Association, (ii) Intergovernmental Oceanographic Commission of UNESCO (through its Region's and Capacity Building programmes), (iii) Italian Space Agency (through the San Marco Research Centre) provided training facilities and accommodation free of charge in addition to providing resource persons, and (iv) Western Indian Ocean Satellite Application Project – WIOSAP (funded by the European Union through the Meteorological Transition in Africa Project).

### **4. WORKSHOP ON APPLICATION OF CLIMATE INFORMATION IN THE PLANNING AND MANAGEMENT OF COASTAL ZONE, MARINE AND INLAND AQUATIC RESOURCES FOR SUSTAINED DEVELOPMENT**

The IGAD Climate prediction and Application Centre, in collaboration with ODINAFRICA and WIOMSA organised a special session during the Regional Climate Outlook Forum for the Greater Horn of Africa (GHA) held in Mombasa, Kenya from 2-4 March 2005 focussing "*Application of Climate information in the Planning and Management of Marine, Coastal Zones and Inland Aquatic Resources for Sustainable Development*". The session, which provided an opportunity for interactions between climate and marine experts covered topics such as:

- Marine/Coastal and Inland Aquatic resources of the GHA and the associated Socio-economic activities

- Climate information needs for Planning and Management of Coastal Zone, Marine and Inland Aquatic Resources for Sustained Development
- The Global Oceans and the climates of GHA: Special reference to the ENSO and El Nino
- Review of the Climate factors affecting the GHA region
- Challenges of developing an Indian Ocean Observation Network
- Climate Change scenarios for marine and coastal zone in the GHA
- Potential Impacts of Climate Change on Coastal zone and marine environment: Impacts on and Adaptation for GHA
- Interactions between coastal zone, the oceans and Inland fresh water resources of GHA
- Management and exchange of marine and coastal data
- Coastal Erosion, Degradation and Water Quality
- Management of Marine and Coastal Ecosystems
- Coastal infrastructure, Hotel and Tourism
- Integrated Marine/Coastal Zone Management for Sustainable Development
- The December 2004 Indian Ocean Tsunami disaster
- Response to marine related disasters in the western Indian ocean, including capacity building requirements.

Participants from the ODINAFRICA institutions made key presentations during the session.

**5. FIRST IOC/WIOMSA LEADERSHIP WORKSHOP FOR HEAD'S OF MARINE RELATED INSTITUTIONS FROM WESTERN INDIAN OCEAN REGION.**

The workshop was held at the Hotel Tivoli in Maputo, Mozambique and attended by 20 participants from Kenya, Madagascar, Mozambique, Seychelles, South Africa, Tanzania, and representatives of WIOMSA, UNEP. Most of the Head's of ODINAFRICA institutions in Eastern Africa attended the workshop. The facilitator for the workshop was Mr Ian Dean from South Africa. Presentations of models were made by DHI of Denmark and WAPMERR..

The objective of the workshop was to : (i) Improve the management and protection of the ocean and coastal zones by strengthening the leadership capacity of senior role players who can and want to make a difference in these domains, (ii) nurture a network of highly influential leaders who can integrate regional and local initiatives in a mananer that builds sustainable outcomes which deliver high impacts, and (iii) create an opportunity for personal learning and renewal.

The workshop covered a wide range of topics including: the challenges of leadership, core building blocks of world class leadership in science and technology, Personal mastery as the foundation for effective leadership, Building a high performance Science and Technology organisation, Leadership versus management, Competences for effective leadership, and Initiating and leading Change.

At the end of the workshop the participants focussed on how they were going to: apply what they had learnt, make people around them also benefit, maintain the knowledge acquired, and extend the knowledge.

The group looked at topics currently at the forefront of development in the marine science field and identified remote sensing, modeling and biotechnology as some of the areas in which the region will have to focus. A team should be created, to sit together with a facilitator and develop regional proposals covering these topics.

Two follow-up leadership workshops are planned for the next three years, and a proposal writing and three team building workshops. It is expected that these workshops will result in improved leadership skills, leading to better management and sourcing of funds for on-going/planned programmes, and ultimately to improved management and protection of the ocean and coastal zones in the region.

## **ANNEX VI (b)**

### **POTENTIAL FOR FURTHER COLLABORATION.**

#### **IODE Member institutions outside the region.**

During the IODE-XVIII two proposals were mooted for data analysis:

- NIOZ offered to host scientists from Madagascar and Mozambique to analyse data collected from moorings in the Mozambique channel over the last six or so years.
- The Canadian national Oceanographic Data and Information Centre also offered to host ODINAFRICA interns.

#### **LME, GEF and other Large Scale Projects implemented in Africa**

There are several ongoing and planned LME/GEF projects along the coasts of Africa. In the IOCWIO region there are: (i) the WIOLaB project on Addressing Land Based Activities in the Western Indian Ocean region, (ii) South West Indian Ocean Fisheries Project (SWIOFP), (iii) GEF-Tourism project, (iv) ASCLME, and (v) African Coelecanthe project. Similarly in IOCEA we have the Benguela Current LME, Gulf of Guinea LME, and the Shoreline Changes project.

The LME provides a convenient geographical unit for development of products, and ODINAFRICA could be a useful partner to the Large Scale projects, providing capacity for processing and archiving data, and also partnering in development of products.

#### **IOC Capacity Building Programme.**

The IOC Capacity Building programme is planning a series of workshops on (i) Leadership skills for head's of institutions and senior role models, (ii) Proposal writing, (iii) team building, (iv) Use of Modeling, Remote Sensing and GIS for management of coastal resources and environment. These workshops will be organised within the framework of the IOC Regional Programmes. The first Leadership workshop for IOCWIO was held in Maputo, Mozambique in November 2005.

#### **Joint IOC/WMO Commission on Oceanographic and Marine Meteorology.**

IODE and JCOMM organised a workshop on modelling and data management at the IODE Project Office, Ostend, Belgium in September 2005 which covered the following topics: Operational oceanography, Wave research, Modelling Tropical Cyclone and storm surges, Applications in ocean modeling (search and rescue), Circulation, Ecological modeling, and Requirements for ocean data in support of numerical regional ocean models. Similar workshop is planned for 2006 and 2007.

Several ODINAFRICA data managers will be attending the following workshops organised by JCOMM in March 2006:

- *JCOMM/OCG workshop on the establishment of a pilot project to collect in real-time metadata from SST and temperature profile data:* to establish a Pilot Project for real-time distribution of metadata regarding SST and sub-surface temperature profile data. This followed recommendations by the Ocean Observing Panel for Climate (OOPC).
- *DBCP users and technology workshop:* to establish better links between drifting buoy data users on one hand (e.g. NWP, Ocean modelling, science), and buoy operators, manufacturers, and satellite data telecommunication providers on the other hand. The goal is to design drifting buoys in such a way that they last longer and still meet user requirements.

We should explore ways for further collaboration with JCOMM in the framework of WP4.

#### **Indian Ocean Tsunami Early Warning & Mitigation System.**

The development of the Indian Ocean Tsunami Early Warning & Mitigation System provides an opportunity to introduce a higher level of development for oceanography, and geophysics in the region. This is especially important because ownership of the system will only result from the science being established and utilized in the region. ODINAFRICA can play a key role in spearheading the IOTWS development in Eastern Africa, and linking this with its activities so as to benefit from synergy.

The information available from the national assessment missions should be used to prepare targeted plan, outlining the units, organizations and resources required for implementation of IOTWS in the



region. Expert assistance required must be identified and mobilized to ensure the success of the initiative. The region should pro-actively act to obtain resources by mobilizing the current goodwill.

WP2 is already collaborating closely with IOTWS in the implementation of sea level stations. WP4 should also link its activities with the capacity building initiatives planned for modelling, risk assessment, preparation on inundation maps for high population areas, and . The focus of these will be on modelling, remote sensing and GIS skills, which are also key to the preparation of ODINAFRICA data products.

**Western Indian Ocean Marine Science Association.**

The Western Indian Ocean Marine Science Association collaborated with IOC Capacity Building and regions programmes and the Italian Space Agency to organise a workshop on Application of Satellite Altimetry to Oceanography at the San Marco Space Station in Malindi, Kenya in September 2004. WIOMSA has also collaborated with IOC and the IGAD Climate Prediction and Application Centre in Nairobi, Kenya in organising a workshop on Application of Climate Information to Management of Coastal/Marine environment and resources.

WIOMSA has expressed an interest in collaboration in activities related to biodiversity, modelling, remote sensing and GIS. ODINAFRICA should follow-up on the possibility of collaboration, and also applying for the grants from the Marine Science for Management programme of WIOMSA to supplement resources available for implementation of activities.

**Coastal and Marine sub-theme of NEPAD (NEPAD/COSMAR).**

ODINAFRICA is already collaborating with the NEPAD/COSMAR in implementing activities already outlined in the report. NEPAD/COSMAR in collaboration with the secretariat for the Abidjan and Nairobi Conventions (UNEP Regional Seas Programme) are planning a Marine Science meeting for West Africa in 2006, and a “Coastal Zones Africa” conference in Cape Town South Africa in 2007. ODINAFRICA could use these to publicize its activities.



## OBITUARY DR SEKOU CISSE



It is with deep sorrow that we announce the sudden death of Dr Sekou CISSE of the Centre de Recherche Scientifique de Conakry – Rogbane (CERESCOR), Guinea, who passed away on Tuesday 06 December 2005 after a short illness.

Dr Cisse was the ODINAFRICA National Coordinator for Guinea, and formerly the ODINAFRICA Regional Coordinator for IOCEA region.

Born on 24 February 1954 in Dakar, Senegal, Dr Cisse had his early education at the Institut Polytechnique de Conakry Faculté des Sciences where he graduated with a DES in Oceanology in 1978. After his graduation he taught Oceanography at the l'Ecole Nationale de la Marine, Conakry upto 1979 when he joined the CERESCOR as the Head of the Oceanography Laboratory, a position he held till 1982 when he proceed to the Soviet Union for further studies at the Institut Hydrométéorologique de Saint Peterbourg. He graduated with a PhD in Oceanology in 1987. The title of

his thesis was : ***Couche homogène de la Zone Economique de Guinée :Dynamique et modèle de prédiction.*** He returned to CERESCOR and was appointed Head of the Division for Scientific Information Management. He also served as Head of the research group for Coastal Ecosystems.

Dr Cisse has participated in several regional and international programmes such as UNESCO sponsored COMARAF project, and the UNDP funded Climate Change project. He has authored numerous reports and journal articles on Coastal Management, as well as Data and Information Management in Guinea.

Dr Cisse was elected as the ODINAFRICA Regional Coordinator for IOCEA during the first project workshop in Dakar, Senegal, in May 2000 and served in this position till the end of the second phase of ODINAFRICA in 2003. During this period he travelled to several countries participating in the prtoject to assist in implementation of planned activities.

Dr Cisse was buried yesterday 07 December 2005 in Conkary, Guinea.

During these difficult and trying time our thoughts go to his wife and children, as well as colleagues at the CERESCOR.

We take this opportunity on behalf of the ODINAFRICA family to pass our condolences to all of them.

May the almighty God Rest his Soul in Eternal Peace.

## OBITUARY

### CHARLES EMENE GABCHE



We regret to announce the sudden death of Mr Charles Emene Gabche, on Sunday 9 October 2005 following a heart attack. Mr Gabche was the Data Manager for the Cameroon National Oceanographic Data and Information Centre during the second phase of ODINAFRICA (2001-2003).

Born on 28 January 1959 in Nkun-Ngwo-Momo in North West Cameroon, Mr Gabche had his early education at the Cameroon Protestant College, Bali, before proceeding to Ibadan University in Nigeria where he graduated with a Bachelor of Science degree (Chemistry) in 1983, and an Msc (Fisheries and Hydrobiology) in 1987. His thesis was on "The glycogen and lipid reserves with gonad maturation in *Oreochromis niloticus* and *Chrysichthys auratus*"

From there he joined the Institute of Agricultural Research for Development, Ministry of Scientific and Technical Research (IRAD).

Mr Gabche was designated as the Data Manager for the Cameroon National Oceanographic Data and Information Centre hosted by IRAD in 2001 and attended the ODINAFRICA Data Management training courses in Casablanca, Morocco (2-13 April 2001), and Tunis, Tunisia (29 April- 10 May 2002), and Accra, Ghana (14-18 April 2003). He also attended the second ODINAFRICA Annual Planning and Review meeting hosted by the Cameroon NODC in Limbe, Cameroon from 18-21 November 2002, and the final ODINAFRICA-II Review workshop, and planning meeting for ODINAFRICA-III in Brussels, Belgium (1-10 September 2003).

During these difficult and trying time our thoughts go to his wife Abuo Cecilia Angiekom, children, and colleagues at the Institute of Agricultural Research for Development.

We take this opportunity on behalf of the ODINAFRICA family to pass our condolences to all of them.

May the almighty God Rest his Soul in Eternal Peace.