**Capacities Available in the ASCLME Region**



**Ocean Data and Information Management Network for Africa**

**ASCLME Region**

**1/1/2011**

Prof. Dr Desiderius CP MASALU

Report of the Mission of the Regional Coordinator to Assess Data and Information Management Capacities in the ASCLME Region

**Contents**

|  |  |  |
| --- | --- | --- |
| List of abbreviations and acronyms |  | 3 |
| 1. Introduction |  | 5 |
| 2. Preparations for capacity assessment missions in the ASCLME region |  | 5 |
| 3. Assessment visits |  | 6 |
| 4. Status of implementation of ODINAFRICA at national level |  | 8 |
| *Collaboration with other projects/institutions* |  | 8 |
| 5. Major weaknesses and the potential of success of ODINAFRICA-IV |  | 9 |
| *Status of the Atlas development at national level* |  | 10 |
| *Other products planned/required* |  | 10 |
| *Major weaknesses of the NODC in the ASCME Region* |  | 11 |
| 6. Key components for the implementation of ODINAFRICA-IV |  | 11 |
| 7. Reviewing capacities available |  | 12 |
| *(i) Issues of mandate to the institution* |  | 12 |
| *(ii) Existence of Guidelines and framework documents at institutional and national level* |  | 12 |
| *(iii) Capacities available - Personnel* |  | 13 |
| *(iv) Data streams collected on a regular basis* |  | 13 |
| *(v) Data sets available at the institution* |  | 13 |
| *(vi) Library holdings* |  | 14 |
| *(vii) Specialized skills and software available at the data and information centres* |  | 14 |
| *(viii) Databases developed* |  | 15 |
| *(ix) Other products and services developed/planned* |  | 15 |
| *(x) Contribution to national/regional/global databases and portals* |  | 16 |
| *(xi) List of regional or national projects that either contributed to, or received data from the NODC during ODINAFRICA-III* |  | 16 |
| *(xii) List of projects and organisations that have co-funded activity/products development by the NODC during ODINAFRICA-III* |  | 16 |
| *(xiii) Equipment which is urgently required for data and information management* |  | 17 |
| *(xiv) Software which is urgently required for data and information management* |  | 17 |
| *(xv) Data management staff* |  | 17 |
| *(xvi) Information management staff* |  | 18 |
| *(xvii) Internet connectivity and websites at the institution* |  | 18 |
| *(xviii) Existing communication tools* |  | 19 |
| *(xix) Details of other data, information, GIS or remote sensing data, information or capacity reviews undertaken over the past 10 years in your country* |  | 19 |
| 8. Sharing of information and stakeholder involvement |  | 20 |
| *Additional Information* |  | 20 |
| *Responses from partner institutions/projects/programmes* |  | 20 |
| *Websites of the NODCs and host institutions* |  | 21 |
| 9. Comments and recommendations from the host |  | 22 |
| *Comments from the NODCs* |  | 22 |
| *Proposals for agenda items and (offers) venue for the planned regional meeting* |  | 23 |
| 10. Visit to local partners during the mission |  | 24 |
| Seychelles |  | 24 |
| Mauritius |  | 24 |
| Madagascar |  | 25 |
| Kenya |  | 26 |
| Mozambique |  | 28 |
| South Africa |  | 29 |
| Tanzania |  | 31 |
| 11. Summary comments and recommendations |  | 32 |
| Appendix I |  | 34 |
| Appendix II |  | 49 |
| Appendix III |  | 60 |

**1. Introduction**

ODINAFRICA-IV activities started in 2009 by the appointment of the Project Manager and Regional Coordinators. ODINAFRICA regions are based on the Large Marine Ecosystems (LMEs) surrounding the African continent. Within this setup the Agulhas and Somali Current LME (ASCLME) region consists of the following eight countries (i) Comoros (ii) Kenya (iii) Madagascar (iv) Mauritius (v) Mozambique (vi) Seychelles (vii) South Africa and (viii) Tanzania.

The Project Manager started off by developing a questionnaire to assess available capacities in ODINAFRICA countries (**Appendix** I). The questionnaire was circulated through the NODCs of all participating countries. Because the focus was to assess the available relevant capacities in the countries it was emphasized that the questionnaire be completed by as many relevant institutions in each participating country as possible. In the ASCLME region all countries responded to the questionnaire. However, only two countries submitted responses from more than one institution as it was requested. These are (i) Madagascar which submitted three (3) responses including one from the NODC and Seychelles which submitted four (4) including one from the NODC and two (2) from conservations societies.

The First Project Steering Committee (PSC) meeting was held in January 2010 to chart down the implementation of ODINAFRICA-IV. Among other things, the PSC received compiled regional reports on the status of available capacities based on the responses received form the questionnaire that was circulated by the Project Manager (Annex I). After thorough deliberation on the reports, the PSC decided and directed that all RCs make follow-up missions to all participating countries in their respective regions to (i) verify the reports but more importantly to see and familiarize themselves with the actual situation (including identifying/ discussing/raising key issues) in the countries they are leading, (ii) collect additional information on available capacities which were inadvertently not included in the original questionnaire (i.e., further information for Part I, questions 3 and 5, and Part II question 9 of the questionnaire; additional information that was requested the ASCMLE Project; and “climate capabilities and potential of new technologies” of all participating institutions).

**2. Preparations for capacity assessment missions in the ASCLME region**

In order to ensure successful assessment missions careful advance preparations in several aspects were necessary as follows.

1. Development of a follow-up questionnaire for additional information – As mentioned above some further information were needed for several questions in the main questionnaire that was prepared by the by the Project Manager. Additionally, the ASCLME project which has close collaborations with ODINAFRICA had put forward new questioned that were of interest for both ODINAFRICA and ASCLME projects as far as knowledge of available capacities in the ASCLME region was concerned. It was also deemed useful to assess climate capabilities and potential of new technologies in the region. This proposal was put forward the climate expert groups. The follow-up questionnaire (**Appendix** II) was carefully prepared by the Regional Coordinator in close collaboration with the Project Manager to capture the new information required.
2. Planning the mission – Before the Regional Coordinator embarked on the assessment mission it was also important to plan and decide how the mission would be undertaken. Parameters for consideration were (i) there were two sources of funding for the mission i.e., ODINAFRICA and ASCMLE project, and (ii) timing and duration of the mission. It was important to allow for enough time for preparations for the Regional Coordinator as well as the host countries to be visited. Also, it was important to ensure enough working time for each country during the mission, and ensure good health of the Regional Coordinator. After thorough deliberations on all these, it was decided to organize the mission in two rounds i.e., Island states which was funded by the ASCLME project, and Mainland states which was funded by ODINAFRICA. An average of two to three working days for each station was agreed. Based on this each round took about 26 days. A two weeks interval between the two rounds was set to allow the Regional Coordinator to rest a bit. The first round involved Island states in the ASCLME region and was carried in May and June 2010. The second round which involved Mainland states was done in September and October 2010.
3. Preparation of general guiding questions – In order to ensure that nothing important was forgotten during the visit to each country, the Regional Coordinator took the liberty of preparing some general guiding questions that acted as a “to-do-list” during visits to the NODCs and/or partner institutions/projects (**Appendix** III). The general guiding questions covered issues to follow upon including specific ones, issues to elaborate and/or clarify information to deliver and issues from the hosts.
4. Local logistics/arrangements – Preparation for local logistics involved advance ping-pong communications between the Regional Coordinator, National Coordinators, and the Project Manager. This was critical to ensure a swift and successful mission. Timing was carefully considered to allow for local logistics.

**3. Assessment visits**

During the missions the main host were the National Coordinators; however, whenever it was possible the Regional Coordinator also had meetings with Heads of the Host Institutions hosting the NODCs, as well as staff of the NODCs particularly the Data Managers and Information Managers. The Regional Coordinator also visited local stakeholder/partner institutions/projects working with the NODCs.



**From Right:** John BEMIASA (DM), Head of Institution Dr Ramamphiherika DANIEL, Prof Desiderius CP MASALU (RC), Ms VOANAY (IM), Mr ALFRED (Senior Administrative Officer) and Mr JERS (DM)

Because of the existing collaborations between ODINAFRICA, the ASCLME project and the Nairobi Convention Clearinghouse Mechanism the Regional Coordinator also met with National Coordinators of those projects during the mission to discuss the collaboration at national level.

The dates for the first round of the mission to Island states were: Seychelles (30 May – 2 June); Mauritius (2 June – 5 June); Madagascar (5 June – 14 June: Tulear 6-8 June, Tananarive 8-10 June, Nossi Be 10-12 June, Tananarive 12-14 June); Comoro (14 June – 17 June).

The date for the second round of the mission to mainland states were: Tanzania (24-26 Sept); Kenya (26 Sept – 3 Oct: Mombasa 26-29 Sept, Nairobi 29 Sept. – 3 Oct.); Mozambique (3 – 6 Oct.); South Africa (Port Elizabeth 6-9 Oct., Durban 9-13 Oct., Capetown 13-16 Oct.). For Madagascar, Kenya and South Africa more cities were visited because of their large size and distribution of partners/stakeholders.

**4. Status of implementation of ODINAFRICA at national level**

By mid October 2010 when the RC finished visiting mainland state of the ASCLME region five out of eight countries in the region had signed and submitted their Agreements. Almost all of these countries also had already submitted their workplans as well as their first progress. The countries that had signed their Agreements and submitted their workplans and first progress reports were Mauritius, Madagascar, Kenya, Mozambique and Tanzania. Mozambique reported that they had not yet spent all of the funds from the first instalment but had already requested offers for the purchase of computers. They promised that they would submit receipts to the PM as soon as possible after the purchase. Kenya reported that most of the funds for the first instalment were spent on the first national Atlas workshop which was held in July 2010. Two countries, which are Seychelles and South Africa had not yet signed their Agreements by mid October 2010, and thus had also not submitted any workplans or progress report. Due to the shortage of manpower Seychelles was still discussing modalities with PM on how much they would participate in ODINAFRICA-4. However, after in-depth deliberation on the matter with the RC it was clear and agreed that Seychelles could actually participate fully in the project. It was further agreed that the NC should contact the PM to inform of the readiness of Seychelles to participate fully in ODINAFRICA-4. On the other hand South Africa reported that they were still discussing with the PM on the modalities of funds transfer before they committee to sign the Agreement.

***Collaboration with other projects/institutions***

ODINAFRICA-4 among other things is determined to foster and/or increased the collaborations of the NODCs with other relevant projects/programmes/institutions at national level. To ensure this every year some funds will be dedicated for outreach products and/or activities. These funds could be used by the NODC to team up with other local players to organize an event or activity. For the ASCLME region three projects are key partners. These are the ASCLME Project, SWIOFP and the Nairobi Convention Clearinghouse Mechanism (NC-CHM) project. The ASCLME project and the NC-CHM have been and continue to collaborate closely with ODINAFRICA at top project levels. Similar, the ASCLME and SWIOFP collaborate closely at top project levels and are “sister projects” being funded through the same facility. It is imperative that these collaborations between the projects in the region would exist at national level. However, the actual situation is variable in the countries as follows. The collaboration between ODINAFRICA, NC-CHM and ASCLME project at national level is good in Mauritius, Madagascar, Kenya, Mozambique, and Tanzania. For South Africa the collaborations between the three projects at national level had just started. On the other hand, the collaboration between the three projects was very poor in Seychelles. This is apparently because the formal collaboration between ODINAFRICA with the ASCLME and NC-CHM projects was not clearly understood. The RC clarified these collaborations during a joint meeting with the National Coordinators of the three projects.

The collaboration between the NODCs and the SWIOFP is very poor or completely non existent in most countries of the ASCLME region. It was good in only three countries i.e., Seychelles, Madagascar and Kenya apparently because the NC was coordinating some theme in the SWIOFP or the NODC and the SWIOFP were hosted by the same institution. In Seychelles, SWIOFP is well integrated with the NODC apparently because it is coordinated by SFA which hosts the NODC. Similarly, in Kenya the collaboration with SWIOFP is very good apparently because it is hosted at the same institution hosting the NODC and the other projects (ASCLME and NC-CHM) and all projects being coordinated by the same person. For Madagascar, the ODINAFRICA NC is the National Focal Point for the pelagic theme of the SWIOFP.

Another regional project of interest which was reported to exist in the ASCLME region is the AMESD project. The AMESD project which is generating a lot of data is well linked to the NODC in Mauritius. In Madagascar the AMESD project involves several institutions including IHSM (NODC), Meteorology Department, Fisheries department and others as partners. These institutions are data receivers and satellite stations were planned to be installed by the end of 2010 for temperature, salinity etc. In Kenya two institutions i.e. KMFRI (NODC) and KMA are participating in the AMESD project, and it was planned for them to receive and install satellite receiving stations in 2010. The AMESD project is operating in Seychelles although it is not firmly collaborating with the NODC. The NODCs in Mozambique, South Africa and Tanzania were not aware of the existence of the AMESD project in their countries. The RC requested these NODCs to investigate further on the possible existence of the AMESD project in their countries.

The NODCs in the ASCLME region collaborate with local NGOs as well as government departments in their respective countries. The Seychelles NODC works with several NGOs including the ICS. In Mauritius the NODC collaborates with marine related institutions e.g. MOI, University of Mauritius, ALBION Fisheries Research Centre and others. The NODC also works with several NGOs who use data from the NODC and participate in meetings. These include Red Cross and the Mauritius Meteorological society. These partners participate efficiently in meetings. The NODC in Madagascar collaborates with many NGOs e.g. Blue Venture, Reef Doctor, FTM, CNRO and WCS. The WCS is participating in the national atlas team activities. The Kenya NODC (KeNODC) collaborates with several NGOs which include CORDIO, CDA (Coastal Development Authority), KMA, and CRCP (Coral Reef Conservation Project). It was noted that there is a need to expand the list of partners to include universities, other research institutions etc. In Mozambique the NODC works with several partners including the Fisheries Department, INAM (Institute for Meteorology of Mozambique) etc. It also works with some NGOs. For South Africa the NODC is collaborating with several NGOs including ORI, SANParks, SAEON etc. On its part the Tanzania NODC (TzNODC) collaborates with several government departments such as Fisheries Department (Dar), Fisheries Department. (Zanzibar), NEMC, TPA, TMA, Navy, UDSM, Mbegani Fisheries Development Institute, TAFIRI etc. TzNODCS also collaborates with several relevant NGOs such as TCMP, KICAMP, WIOMSA etc.

**5. Major weaknesses and the potential of success of ODINAFRICA-IV**

ODINAFRICA-IV is focused on product development and to start with the African Marine Atlas has been chosen as an icon product. During the visit to ODINAFRICA countries in the ASCLME region the RC assessed the potential of achieving this main objective of ODINAFRICA-4. In connection to this the RC also wanted to know what other products the countries would like (are planning) to develop to run on top of the atlas or would like to develop as stand alone. These products would help the ODINAFRICA in deciding the next icon product after the Atlas is completed. Furthermore, the RC also wanted to know the major weaknesses of each NODC in the region. This could help in focusing capacity development plans of ODINAFRICA or in planning of collaborative initiatives by other partners.

All ODINAFRICA countries indicated that the objectives of ODINAFRICA-4 in product development are achievable. However, some attention needs to be taken given several factors that could hamper success in achieving the objectives. Different factors were listed/mentioned by different countries. Mauritius elaborated that the objectives will be achieved if adequate training is given in a timely manner e.g., in development of user interface etc. Furthermore, a help desk is important to achieve the target. Madagascar clarified that although the focus is feasible and achievable but the NODC needs more staff. On its part Kenya elaborated that in order to achieve the objectives it needs more people trained in particular technicians because scientists are too busy. Training similar to the first Atlas workshop held in July 2010 in Mombasa, Kenya was recommended. On the other hand, Mozambique cautioned that although the objectives are achievable it may probably be not in time. South Africa clarified that although the objectives are achievable a solid institutional foundation needs to be laid. Many stakeholders in South Africa are not aware of what is ODINAFRICA.

***Status of the Atlas development at national level***

The development of national marine atlas is progressing well. All countries in the ASCLME region except only for one i.e. South Africa have already formed their National Atlas teams and elected their team leaders. Seychelles reported that their national atlas team was actively doing the homework which were provided by ODINAFRICA Marine Atlas development instructors. Madagascar reported that its atlas team included members from WCS, National Environment Office, FTM, and MNP-CHM. On its part Kenya reported that although the Atlas team has already been setup it is not yet complete as there is a need of training of more technical staff. Furthermore, it was reported that all members of the team come from KMFRI except only one who is from CORDIO. Mozambique reported that the Atlas team comprises of six members from different government institutions. It also reported that the Team Leader appeared to be a bit slow in catching up with the homework as well as in mobilizing the national team. It was agreed that more effort would be done to ensure the Team leader gets on board as required. On its part South Africa reported that the national Atlas team has not yet been formed, however that the Team Leader is the NC himself. The NC has done one presentation on the atlas and is still looking for other suitable team members. Finally, Tanzania reported that its atlas team is actively working on the atlas. The team leader has already been nominated. The team comprises of experts from different institutions and government departments.

***Other products planned/required***

Several different other products were planned and/or preferred by ODINAFRICA countries in the ASCLME region. These products vary depending on the local setup and climate of the countries. Mauritius named three products which are (i) maps of sensitive areas, urban centres etc. (ii) paths (trajectories) of cyclones and probabilities of striking and (iii) sea level rise in which emphasis will be on downscaling of models is essential here. Madagascar like Mauritius is interested in (i) cyclone root prediction and (ii) sea level rise. On its part Kenya is interested in having KMFRI publications to be online. South Africa is interested in the following products (i) state of marine environment report (annual) (ii) operational oceanography products (near real-time) and (iii) early warning system. Tanzania is interested in (i) dynamic hotspot areas mapping (ii) inundation scenarios/projections and (iii) coastal and marine area spatial planning product. Seychelles and Mozambique did not propose any products as they needed to consult more with other stakeholders. Kenya reported that data products as well as other products that will run on the atlas need further national consultation and will be added later. Similarly, South Africa reported that more products of national interest will be added after national consultations.

***Major weaknesses of the NODC in the ASCME Region***

On the major weaknesses of NODCs that could hinder the success of ODINAFRICA several variable weaknesses were pointed out. Seychelles reported that the major weakness is the shortage of human resource which is a national problem. Madagascar, Kenya, Mozambique and Tanzania also reported similar weaknesses as Seychelles but which is mainly institutional rather than national. Madagascar reported that of the staff at NODC only the IM (Librarian) works full-time. All other staff work for NODC for less than 50% work time. Kenya reported that RS and GIS capacity is not constantly available. People who are trained get other opportunities and move away. On its part Mozambique reported that the DM works single handed and that there is an urgent need of training other staff in data management to assist the DM. Otherwise, Tanzania reported that the DMs are senior members of staff who are busy with many other things while younger members of staff are not very interested in ocean data and information management.

Several other weaknesses were also reported by NODCs. Mauritius reported that the NODC is not independent. It relies on the host institution for everything including funds and data availability. It was recommended that one way to solve this is for the NODC to generate many products that are needed by the various stakeholders e.g., seafood hub and greener Mauritius. Secondly, is to publicise products and services of the NODC. Similarly, Madagascar reported that Government support is too small (negligible) although it funded the NODC building and is paying the IM’s salary. However, the DM receives nothing for his work and also all equipment are from UNESCO/IOC except only for the furniture and internet (although Internet was not paid for by the Government during the visit). Finally, South Africa on its part reported that the major weakness is that there is no dedicated computers/servers for data and no designated DM. It was noted however that, there is currently a new person who will be the dedicated DM.

**6. Key components for the implementation of ODINAFRICA-IV**

The RC took liberty to discuss and clarify with NCs on some of the key components for the implementation of ODINAFRICA-IV. These are (i) national meetings (ii) development of scenarios to run on top of the Atlas (iii) national outreach activities and (iv) purchase of equipment. With regards to national meetings the RC stressed on the need of involving all key players and that the NODC should only be a lead institution and should not decide by itself on key national issues and focus. He also stressed that funds set aside for this activity should not be used for other activities. On the development of scenarios to run on top of the Atlas the RC stressed on the need of involving all key national players so they would play a key role in the development of scenarios. He emphasized for each country, through their national meetings to identify national key issues and prioritize them so it is easy to decide what scenarios will be developed first. To elaborate on this the RC stressed on the differences between countries noting for example that, while cyclones are key issues for Mauritius they are not as far as Tanzania is concerned. This implied that expect a scenario, say for tracing/predicting cyclones/roots would be expected on the Mauritius national Atlas and something else on the Tanzania national atlas. For national outreach activities the RC elaborated that this may involve products and/or activities. The RC stress that wherever possible the NODC should use the funds set aside for this activity as leverage to teaming up with other stakeholder(s) in implementing an activity. Same as for funds for national meetings, the RC stressed that funds set aside for outreach should be used only for the intended purpose. Finally, the RC emphasized that need of purchasing equipment as quickly as possible to ensure swift implementation of ODINAFRICA stressing that fund set aside for this activity should not be used for other activities.

Two countries, Kenya and Mozambique, had already held their first national meetings. Kenya reported that national needs/requirements were identified but were not prioritized and further that scenario/models need further consultations and prioritization. On its part Mozambique reported that during the first national meeting participants were informed on the start as well as the focus of ODINAFRICA-IV. However, key national issues were not identified and prioritized during the meeting. It was reported that this activity will be done during the second national meeting. Only two countries i.e. Mozambique and Tanzania had already purchased equipment.

**7. Reviewing capacities available**

After finishing dealing with specific questions and issues the RC then went through the original questionnaire (**Appendix** I) which was circulated by the PM at the beginning of ODINAFRICA-IV, step by step to verify the responses and propose solutions for issues whenever it was possible. In this the section the status of some of the key items/issues in the questionnaire is highlighted.

***(i) Issues of mandate to the institution***

NODCs were requested to prioritize needs/requirements to the mandate of their host institutions in terms of relevance and availability of data. Furthermore, they were quested to provide examples of products/services required to tackle respective issues. This exercise was to provide guidance for the national meetings that would do the same exercise for respective country. All NODCs in the region responded correctly to the relevancy part but responded in many different ways for the data availability as well as for the example products/services parts. Some countries used the scale of 1 – 5, others used words like “some”, “available”, “partially” and so on. Some just named the type of data or parameter. This made it impossible to compile a clear picture of those parts in the region. The RC requested all NODCs to refill the respective table using the scale of 1 – 5 for the relevancy and data availability and provide specific proposals to the products and services part.

By the end of the assessment mission of the RC in the ASCLME region only two countries, Kenya and Mozambique, had held their first national meetings. During the meeting Kenya identified national needs/requirements but did not prioritized them. It was reported that scenario/models need further consultations and prioritization. Mozambique did not identify key national issues/requirements during the meeting. This activity will be done during the second national meeting. The RC directed all countries in the region to ensure that at their first national meetings (for those who had not yet done) they identify national issues and prioritize them and propose specific products and/or services required for each issue. For the countries that had already done their first meeting they were requested to do the same during their second national meetings.

***(ii) Existence of Guidelines and framework documents at institutional and national level***

All countries had completed this section, some only partially. The RC discussed item by item on the table and it was found that some NC did not know or had just forgotten about the existence of some of the issues. For instance virtually all countries have developments plans of different scales e.g., short term, medium and long term scales. Furthermore, most institutions have the so called “strategic development plans”. However, Seychelles, South Africa, and Kenya either indicated none existence of any such plans or just did not fill anything. In addition, it was also found that several countries were not sure of the years of the various guidelines they had indicated existed e.g., Mauritius on coastal management plans. Seychelles indicated that there were no guidelines at all in their countries but after discussions it was clear they have most of the guidelines mentioned on the table. The RC requested all countries to refill the table and if possible use national meetings which bring together stakeholders to fill some of the tables in the questionnaire.

***(iii) Capacities available - Personnel***

This item was also considered in many different ways by the NODCs; some responded focusing on the staffs who work for the NODC activities e.g. Seychelles. Some focused on the capacity at the host institutions e.g., South Africa, Mauritius, Kenya, Tanzania, and Madagascar. During the discussion some countries even mentioned that it was not clear whether what was needed was national capacities. The RC requested all NODCs to consider capacities at the host institution but said that this may need clarification from the PM or other management organ.

Nevertheless several things became clear during the discussions and from the completed questionnaires. Physical and biological oceanography appear to lead in all NODCs. All NODCs at least have some experts in these areas. The area which is conspicuously poor in expertise is geophysics. The rest of the areas i.e. marine meteorology, socio-economics, resource economics and others have variable very minimal expertise. One explanation for the observed spectrum of capacity could be the dependence on the orientation of the institution e.g. for Mauritius which seems very strong in meteorology. However, it is obvious that expertise in the region is very limited.

***(iv) Data streams collected on a regular basis***

The NODCs in the ASCLME region in general have very poor capability in handling real-time data streams including receiving them. Only two NODCs in the region, first from Mauritius which receives real-time data streams from four (4) tide gauges and from one (1) wave rider; and secondly, from Kenya which receives real-time data streams from one tide gauge, have experience in handling data streams. All other NODCs in the region handle delayed mode data and mostly are from CTD and temperature loggers. In Madagascar, progress is underway to install a tide gauge Tamatave (Toamasina) by the meteorological service. The house for the tide gauge has already been completed. It is hoped that this new tide gauge will be connected to and will relay data in a real time manner to the NODCs when installed. This is an area ODINAFRICA may need to carefully address.

***(v) Data sets available at the institution***

The availability of five categories of data i.e. base maps, geosphere, hydrosphere, biosphere, atmosphere, and human environment at institutions (including NODCs) was assessed to assess the potential of success for the national marine atlases which are pillars for the African Marine Atlas. Two categories of data i.e. geosphere and human environment were found to be conspicuously none existent in the NODCs in the ASCLME region. The other categories of data were found to be present in the NODCs at both national and regional/global scales. The absence of data in the geosphere and human environment categories triggered several questions as to its cause; one of which was whether it was due to simply the nonexistence of the data in the ASCLME region countries or a result of lack of access due to poor collaborations between the NODCs and local players. However, it was noted that the nonexistence of the data in the two fields may be a result of the poor existence of expertise in the two fields, as identified above, in the region.

With regard to the availability of the data for the Atlas initiative all NCs confirmed to the RC that they can get/source all the data from other different responsible institutions. This indicates that most of the data may be available at national level but that there may be poor coordination/collaboration between the different players.

***(vi) Library holdings***

The inventory of library holdings in all the Information Centres (ICs) in the ASCLME region seems to be stable and fine as far as print items are concerned. However, only Kenya, Tanzania and Madagascar have satisfactory percentage of documents/items in digital form. Seychelles has only 6% of only the Seychelles Fisheries Authority reports in digital form; and South Africa has only 2% of journal documents in digital form. On the other hand, Mauritius was not able to provide any information about their inventory in both print and digital forms. The case of Mauritius could be related to the internal problems mentioned elsewhere above and the fact that Albion had just hired a new Information Manager (IM) at the time of the visit of the RC. However, it was difficult to explain the cases of Seychelles and South Africa considering the various facilities such as ODINpub Africa and AfriDir which had been in existence since ODINAFRICA-III and the two countries had been active participants in the project throughout. Although it is noted here that Seychelles indicated to the RC that the IM was also relatively quiet new, this calls for a close follow-up on all ICs to ensure they keep up-to-date reports of their own inventories.

***(vii) Specialized skills and software available at the data and information centres***

Specialized skills appear to be very limited in the ASCLME region. As indicated in the responses of the questionnaire circulated by the PM as well as the discussions between the RC and NCs during his missions in the region, Data Centres (DCs) have none or have just one or maximally two staffs with specialized skills. It is therefore noted here that although there has been several initiatives/efforts to provide training in specialized skills such as GIS and Remote Sensing, webpage development and others in the region, still there is high demand or shortage for the specialized skills. It is noted here that even Kenya which appears to relatively have a good number of staffs with specialized skills reported that sometimes it is not easy to guarantee the presence of such staffs or services, and requested for more training in the specialized areas such as GIS and RS.

Also, during the mission of the RC it was found that the last column on “training requirements” was a bit confusing to the NCs because it was not clear whether it referred to academic training requirements or simply to the specialized skills requirements. The RC directed all NCs to refill the item table by indicating their requirements for “specialized skills” and not academic requirements using the words “Yes” or character “y, or “No” or character “n” as appropriate.

***(viii) Databases developed***

During phase three of ODINAFRICA i.e. ODINAFRICA-III, NODCs, that is, Data Centre plus the Information Centres in respective countries generated several basic databases from both global as well as national and/or regional datasets available. Unfortunately, most of the NODCs, with the exception of only Kenya, Madagascar and Tanzania, appeared to be unaware about these databases in their responses to the PM questionnaire and during the visit of the RC. It was only after they have been reminded about them they could appreciate them. Even after that, South Africa and Seychelles could not get any information about the existing data databases but only about some of the information databases. It was particularly surprising that these countries could not even have access to the inventory of the databases of the respective NODCs. ODINAFRICA may need to put more emphasis on alleviating this weakness, and on proper documentation of the basic data and information databases such as ODV derived databases, ODINpub Africa and OceanDocs etc. that are supposed to be already existent at all NODCs.

In order to be able to assess usability of the various databases the RC, during his mission, the RC requested all NODCs to build a counter for each database to monitor all downloads. For NODCs that do not have the capability to do so they were requested to request for assistance from the RC and/or the PM. Furthermore, the RC emphasized to all NODCs the importance of updating all databases they manage so they reflect the actual/prevailing situation. In response, all NODCs promised to ensure that all databases are kept up-to-date but most of them requested for training in webpage development and management.

***(ix) Other products and services developed/planned***

Most of the NODCs in the region have several other products, apart of the atlas, that are planned or that have been already implemented or are in implementation stage. One of the issues that was clear from the responses for the original questionnaire was that most of the products planned or developed by the NODCs were targeted to a very special limited user group and mostly was for internal user groups. For instance, most of the products that were planned at the Mauritius NODC were targeted for the ministry of environment, at the Seychelles NODC were targeted at scientific use, at the Madagascar NODC were targeted at students and researchers, and at the South Africa NODC the state of the ocean or coast reports were targeted at internal use of the MCM. During the mission the RC to up this issue to each NODC where he discussed and emphasized the need of developing products to serve the broad spectrum of stakeholders. He noted that in fact most of the products that were planned for a limited group of users could in fact serve a large spectrum of users, and that there was no point in restricting them as it defeated the purpose of the NODCs. All NCs agreed with the recommendation and promised to make all products open for all stakeholders.

***(x) Contribution to national/regional/global databases and portals***

NODCs in the region have contributed various data at national, regional and global scope to various recipients. To facilitate this, NODCs used different software such as ARCGIS, WinTuna 2000, weblis, Ocean Data View, ASFASIS and Dspace etc. However, two NODCs could not clearly indicate or explain how they have contributed data at national level. These are South Africa and Mauritius NODCs. During the mission to these NODCs the RC emphasized that although they have been active in contributing data at regional and global scope within the ODINAFRICA framework it is important for an NODC to justify its existence at national level. One aspect that was noticeable in the responses and during the mission of the RC is the lack of data packaging experience of the NODCs. Because of this weakness most NODCs could not tell what dataset they contributed. This is an area that DMs may need to be exposed so they could best package the various data they contribute online or by request. This will enable NODCs to have readymade datasets for different purposes and/or periods ready to be shared to stakeholders, and could enable the datasets to be citable.

***(xi) List of regional or national projects that either contributed to, or received data from the NODC during ODINAFRICA-III***

All NODCs the the ASCLME region have received and/or contributed data at national and/or region level except only for the Seychelles NODC. During the mission the RC was informed about the various contributions made by the NODCs as well as on the different projects that have contributed data or simply deposited data to the NODC. The current state where NODCs have contributed and received data from other projects is encouraging as it shows the usability of NODCs, and should be maintained and improved.

Seychelles performed poor in this area probably because of the changes of both the DM and IM that happened few months before the mission of the RC, and because of poor record keeping. However, the new NC promised the RC during his visit that he will ensure they establish proper record keeping and collaborations with other relevant projects as required within the ODINAFRICA-IV framework. This would enable the NODCs to play a key role in data exchange at national, regional and project levels.

***(xii) List of projects and organisations that have co-funded activity/products development by the NODC during ODINAFRICA-III***

Only two NODCs had co-funded activity/product development in the region during ODINAFRICA-III. These are the Tanzania NODC with ACEP to map the bathymetry of the Tanga coastal zone for the establishment of the Tanga Coelacanth Marine Park the development of the GIS database for the same. The other one is the Mauritius NODC which worked with the Clinton’s Initiative in the development of the Tsunami warning system and the Prime Minister’s Office (Mauritius) to monitor ocean waves. Co-funding of activities/products is an area that ODINAFRICA-IV may need to direct more efforts. During the mission the RC requested all NODCs to set aside some funds from the operational expenses for co-funding of activities and/or product development as appropriate. In particular, he requested them to start by using the outreach funds as collateral to entice other stakeholders into joint activity and/or product development activities.

***(xiii) Equipment which is urgently required for data and information management***

The NODCs in the region had variable requirements for equipment that were urgently required. This included wave rise buoys, tide gauges, IT equipment, server, scanner, computers, optical measurements equipment, external hard drives, laptops, printers, digitizers and consumables. During the mission the RC discussed in detail with the NC on their respective NODC requirements. In the basket was the two computers being provided for by ODINAFRICA-IV, one for the DC and the other for the IC. After thorough discussion with the NCs separately it was agreed that all NODCs can easily fit all their other urgent requirements in the operational expanses budget provided they develop a good procurement plan that would not affect the daily operations of the NODC. The RC requested all NODCs to ensure they include their equipment requirements in their workplans for approval by the PM.

***(xiv) Software which is urgently required for data and information management***

Urgently required software for the NODCs in the ASCLME region included Matlab 8a, Envi, Statistica, Dspace, Arcgis 9.3, Windows for server, Microsoft SQL server, tide analysis software, Inmagic, and marine explore. Madagascar reported that its Inmagic database is faulty and an expert is needed to rectify it. It was further reported that an expert from Seychelles, Joset CONFIANT, tried to recover the database but was not successful. ODINAFRICA should find ways to help Madagascar with this problem. During the discussion with the NCs during the mission of the RC it was agreed that all NODCs that were found to require software which were freeware should immediately download them or request for assistance to do so. Additionally, for all other software it was found and agreed that they could be procured from the operational expanse budget provided by ODINAFRICA. The RC, as above, requested NODCs to to carefully consider and include their software requirements in the workplans for approval by the PM.

***(xv) Data management staff***

During the mission to NODCs in the RC had an opportunity of discussing the issue of staff available including data managers. NODCs in the ASCLME have an average of five (5) staff involved in data management which is a good situation. Only Seychelles had one staff who is the DM and NC. Seychelles is faced by a serious shortage of manpower as a nation and it may need to be carefully considered in ODINAFRICA. As far as the other NODCs are concerned the RC requested all NC to send the youngsters for Data Management training as soon as it is advertised at the IODE Project Office in Oostende. In particular he emphasized this to new DMs who have not yet underwent any training in data management. This involves Seychelles, Madagascar, and South Africa. It was agreed in principle that ODINAFRICA needs to seriously consider training a new batch/generation of data managers to fill the gap of the first batch whom most of them have ascended on their career ladder and are thus busy with many other things including administrative and leadership responsibilities. The RC also requested the DMs to send their details and those of other staffs involved in data management to the PM so that they could be included in the respective mailing lists to ensure they are kept up to date with pertinent issues and information.

***(xvi) Information management staff***

Kenya is the only country the ASCLME region that has a large number of staffs, five (5), who are dedicated for information management. All other countries i.e., Madagascar, Mauritius, Seychelles, South Africa and Tanzania have only one person involved with information management. Among these, the information managers for Madagascar, Mauritius, Seychelles, and Tanzania are new comers and have not yet undertaken the basic ocean information management training. The RC requested and emphasized to all NC to send the new IMs for the basic training as soon as possible whenever the training is offered. In addition, the RC emphasized the need of recruiting more staff at national level to ensure sustainability. The RC also requested the IMs to send their details and those of other staffs involved in information management to the PM so that they could be included in the respective mailing list to ensure they are kept up to date with pertinent issues and information. It is noted here that the IM for Madagascar has been employed by the Government of Madagascar specifically for that job. This is a very encouraging development.

***(xvii) Internet connectivity and websites at the institution***

Internet presence is important for outreach in the current digital error. This applies equally to institutions including NODCs. Aware of this, one of the main object of the previous phases and the current phase has been to assist and ensure that all host institutions as well as the NODCs have reliable Internet connectivity and thus presence on the Internet. By the time of the mission of the RC to the NODCs in the ASCLME region all host institutions had reliable Internet connectivity through dedicated lines (Madagascar, Seychelles, Mauritius, South Africa, and Kenya) and satellite/fibre cable (Tanzania). However, when the RC visited the NODC in Madagascar he was informed that although the host institution had access to the Internet the NODC was not connected to the link. It was reported that the government of Madagascar had stopped providing funds for the VSAT link of the NODC for quite some time but that it had promised to do so very soon.

The connection speed is critical for the Internet link. It is noted that the NODCs in the region are still plagued with poor bandwidth. Three NODCs/host institutions (Seychelles, Mauritius and Madagascar) are still connected with bandwidth of less than 256kbps. The rest (Kenya, South Africa and Tanzania) are connected with bandwidths of up to 1014kbps. It is hoped that this situation will improve quickly in the region following the landing of several marine fibre cables in most of the countries of the region.

All host institutions of NODCs in the region have own homepages and institutional email addresses. However, it was found that four of the host institutions their homepages as well as mail accounts are hosted by a local ISP and not by the institutions themselves. Only the host institution of the Tanzania NODC hosts own homepage and email accounts. On the other hand, NODC homepages ([www.nodc-countryname.org](http://www.nodc-countryname.org)) are still hosted at the IODE project office in Oostende, Belgium. Only one NODC in the region i.e., Mauritius NODC have another own homepage (<http://nodc.intnet.mu/>) which is hosted by a local ISP. During the visit of the RC it was found that most of the NODCs had not updated their homepages hosted at the IODE project office in Oostende. The main reason given was the difficult of accessing the homepages for update. However, it was found that actually most DMs/IMs had misplaced access parameters for their homepages hosted at Oostende. The RC requested all of them to request for their access parameters from the PM and update their homepages as quickly as possible.

Homepages of NODCs among other things were intended to be used for outreach including providing services and access to data and information in a timely manner to stakeholders. However, only the Kenyan and Tanzanian NODCs had data and documents on their homepages for download by stakeholders. It was noted that these data and documents very few and had not being updated since they were put up during ODINAFRICA-III. Clearly, being able to use the Internet for outreach and provision of services to stakeholders is an area that ODINAFRICA-IV needs to strengthen to ensure that NODCs make full use of this facility.

***(xviii) Existing communication tools***

Communication tools facilitate outreach to stakeholders. Different communication tools may vary in their suitability to convey different information for different stakeholders. It is therefore common for institutions/organisations to have more than one communication tools depending on the type of information the share and the type of stakeholders they serve. The most common communication tools available at host institutions of ODINAFRICA NODCs are (i) institutional website and (ii) NODC website. These are the only communication tools available at the Madagascar NODC. Other NODCs in the region in addition have (i) portals – mainly the Nairobi Convention Clearinghouse mechanism (ii) brochures - Tanzania, South Africa, Mauritius, and Kenya (iii) newsletter - South Africa, Mauritius, and Kenya (iv) Institutional journal – South Africa and Mauritius (v) Technical series – Tanzania and Seychelles (vi) Atlas – Kenya (vii) mailing lists – Kenya and Tanzania.

It is notable that none of the NODCs in the region had either the (i) media briefs and (ii) policy briefs communication tools. It is noted here that the two tools are more important as they have an immediate impact to a large community in addition to stakeholders. ODINAFRICA-IV may need to develop these tools within NODCs to increase the visibility and as well as acceptability of NODCs by the community.

The other tool that needs to be mentioned here is mailing lists. Only two NODCs i.e., Kenya and Tanzania indicated in their response they had mailing lists. During the visit of the RC to the NODCs on following on the matter it was found that although all NODCs had mailing lists that were made during ODINAFRICA-II most had not been used for a long time and needed updating and activation. The RC requested all NODC to ensure they revive all mailing lists and where necessary establish stratified mailing lists for their stakeholders, and ensure they are kept up to date. He emphasized that mailing lists ease the communication between the NODC and stakeholders.

Finally, with the exception of Mauritius and South Africa all other NODCs had difficult identifying the even the three main user groups targeted for each of their communication tools. This is a serious weakness that needs to be addressed quickly. NODCs should know the audience they are targeting whenever they are communicating by any means.

***(xix) Details of other data, information, GIS or remote sensing data, information or capacity reviews undertaken over the past 10 years in your country***

Only four countries (Kenya, Tanzania, Mauritius and South Africa) exchanged ideas with the RC on this subject. However, there are general issues that were observed by the RC from the other countries in the region which are pertinent here as follows.

1. Many GIS and remote sensing initiatives have been undertaken nationally and regionally being facilitated by several different sources. However, it is still notable that GIS and remote sensing services are usually not ready available in NODc.
2. The AMESD project is could contribute in capacity building in GIS and remote sensing. It is highly recommended that ODINAFRICA explores avenue for collaboration with this project.
3. Many NODCs have new IMs due to the mobility of personnel. It is important for ODINAFRICA to ensure that these new IMs are trained in ASFA data entry.
4. ODINAFRICA should continue to subscription of all ICs to IAMSLIC. IAMSCLI is a very useful platform for information sharing.
5. Although efforts were done since ODINAFRICA\_II to digitize all ICs catalogues most are not yet available online, and most libraries are still managed manually. Efforts need to be done to change this situation during ODINAFRICA-IV to realize the intended status.

**8. Sharing of information and stakeholder involvement**

Information sharing and stakeholder involvement is key in the implementation and hence the success of ODINAFRICA-IV. In line with this ODINAFRICA in collaboration with the ASCLME project decided to collect additional information on some of the items in the questionnaire (**Appendix I**) that was circulated by the PM to all ODINAFRICA countries. Furthermore, inline with the focus of the ASCLME project the two projects wanted to collect new information that would benefit both projects. To capture this a follow-up questionnaire was prepared by the RC (**Appendix II**) and sent to all NODCs in the ASCLME region and they were requested to hand it in during the visit of the RC. Furthermore, NODCs were supposed to hand in for discussion questionnaire responses from local partner institutions/projects/programmes. This would help to assess the capacities available in other institutions at national level that could be tapped and play a key role in the implementation of ODINAFRICA. Finally, the status of the NODCs as well as host institutions websites was assessed.

***Additional Information***

Unfortunately, only Tanzania handed in the completed additional questionnaire. All other countries had not yet completed the questionnaire apparently because the NCs wanted more clarification. After discussions and clarifications with the RC Kenya promised to send in the completed questionnaire by 4th October 2010. Similarly, Mozambique promised to send in the completed questionnaire by 13th October 2010. Other countries could not commit themselves but promised to complete the questionnaire and send it in as soon as possible.

***Responses from partner institutions/projects/programmes***

One of the aims of the questionnaire to assess available capacities in ODINAFRICA countries that was circulated by the PM through the NODCs of each participating country was to assess available relevant capacities in the countries. It was thus emphasized that the questionnaire be circulated to and completed by as many relevant partner institutions/organizations in each participating country as possible. However, by the time of the visit only two countries had submitted responses from partner institutions/organizations. These are (i) Madagascar which submitted two (2) responses and Seychelles which submitted three (3) responses including two (2) from conservations societies. South Africa handed in one response from a partner organization during the visit of the RC. These responses from partner institutions/organizations were reviewed during the visit of the visit of the RC to assess the potential roles each partner could play in implementing ODINAFRICA-IV. Mauritius NC reported that two partner institutions/organisations informed him that they submitted the completed questionnaire directly to the PM. On the other hand Kenya, Mozambique and Tanzania reported that although they circulated the questionnaire to as many partner institutions they had not yet received any feedback or the responses to the questionnaire.

Partner institutions/organisations from Seychelles that submitted responses to the questionnaire are (i) Department of Environment, Environmental Engineering and Wetland Section (ii) Island Conservation Society (ICS) and (iii) Marine Conservation Society Seychelles (MCS-Sey). The Department of Environment has a very strong GIS capacity and hosts national databases on various aspects relevant to the environment. This partner therefore has a great potential of playing a key role in the implementation of ODINAFRICA-IV at national level particularly in the development of the national marine atlas. ICS has vast experience in conservation issues and biodiversity of Seychelles which make it also a key collaborator in the implementation of ODINAFRICA-IV. However, ICS which was visited by the RC although willing to collaborate with NODC has very few staff. Therefore they promised to collaborate with the NODC on a theme or issue basis. On the other hand MCS-Sey has vast experience in resource economics which could bring value to ODINAFRICA-IV activities. For Madagascar partner institutions/organisations that responded are (i) Ministere de la Peche et de Ressources Halieutiques (MPRH) and (ii) Foiben Taosarintanin’i Madagascar (FTM). MPRH has a strong basing in aquaculture while FTM specialized in mapping. Both institutions could play key role in the implementation of ODINAFRICA-IV e.g. in the national marine atlas development. The RC visited FTM and found that FTM was also coordinating mapping of morphological features in the Indian Ocean which could also very relevant to ODINAFRICA-IV activities. The RC also visited another partner, the WCS, which has a lot of maps and developed several products including national biodiversity atlas is willing to collaborate and support ODINAFRICA. WCS unfortunately, did not complete the questionnaire. They promised to do so and submit as soon as possible. The response from partner institution in South Africa came from Council for Science and Industrial Research (CSIR) which hosts the Southern African Data Centre for Oceanography (SADCO). SADCO stores, retrieves and manipulates multi-disciplinary marine information from the areas around southern Africa, and has been in existence since the 1960's. This means SADCO has a lot of data, information and experience that it could share with ODINAFRICA. The strength of SADCO is in data management.

More effort is needed on the part of ODINAFRCA management to ensure the involvement of as many other national stakeholders and partner institutions/organisations in the implementation of ODINAFRICA-IV.

***Websites of the NODCs and host institutions***

In order to assure the Internet presence for all ODINAFRICA NODC the IODE Project Office for IOC in Oostende allocated space and bandwidth for all NODCs where they can host their homepages. This was done considering the limited bandwidth and storage space available locally to ODINAFRICA NODCs. However, following the visit of the RC in the ASCLME NODCs it was found that Mauritius, Kenya, Mozambique and South Africa did not have access parameters to their homepages and thus have not been able to update them. The RC requested all of them to immediately contact the PM to request for the reissuance of the access parameters. Furthermore, the RC requested them to update their NODC homepages immediately after receiving the access parameters. Madagascar and Tanzania also reported that they have not updated their NODC homepages recently although they have access to them. The RC urged them to update the homepages as soon as possible. On the other hand the Seychelles NC reported that he was not aware of aware of existence of the NODC homepage hosted at Ostende. He promised that he will immediately request for the login parameters to be able to access and update it as well as the institutional homepage. Similarly, Mauritius and Tanzania reported that pages of their NODCs on the host institution homepage are updated regularly. In addition Mauritius reported that it has another own NODC homepage (<http://nodc.intnet.mu>) which is hosted locally by an ISP. This homepage is updated regularly. On the other hand the NODC as well as host institution in Madagascar do not have access to the Internet for a while now apparently because there is no funds for connectivity fees. It was reported that the Government of Madagascar has promised to provide funds for the purpose soon but it has not yet done so.

**9. Comments and recommendations from the host**

***Comments from the NODCs***

At the end of the available capacities assessment the RC invited NCs to raise any comments they might have. Furthermore, in preparation for the anticipated regional meeting of ODINAFRICA NCs the RC welcomed proposals on the possible agenda items as well as the recommendations and offers for the venue of the meeting.

Three countries Kenya, Mozambique and South Africa made several specific comments. Kenya requested that questionnaires need to be carefully composed and straightforward (clear) to be able to capture the responses wanted. This issue of clarity of the questionnaire surfaced several time during the discussions with NCs. Mozambique reaffirmed that although ODINAFRICA-IV activities started a bit late in Mozambique it will try to catch up. Also Mozambique promises to submit revised completed questionnaires by the end of October 2010. With regards to Progress Report I Mozambique agreed that NODC will rewrite the Progress report I to capture well all the activities that have been done so far in Mozambique. This was in response to the comments from the PM through the RC during the RCs visit in Mozambique.

South Africa noted that it has many institutions with different data exchange policies, which is a challenge. In this regard ODINAFRICA needs to be publicised because it is not known by many of the potential stakeholders. Furthermore, National institutional arrangements e.g., MCM being split into two, should be considered carefully i.e., efforts need to be doubled to overcome challenges associated. Establishment of a “real” Data Centre with dedicated staff is required for sustainability of data management activities in South Africa. The newly formed Oceans and Coasts branch from MCM has to lay foundation for data management. Finally, the existence of two different projects i.e., ASCLME and BCLME on the two sides of South Africa should be noted to careful come up with appropriate coordination mechanism.

***Proposals for agenda items and (offers) venue for the planned regional meeting***

In light of the planned regional meeting of ODINAFRICA NCs the RC took the liberty of inviting proposals for agenda items of the meeting from the NCs. Seychelles, Mauritius, Madagascar, Tanzania and South Africa did not have any specific proposals for agenda items at that moment. They promised to send in their proposal later on. Kenya recommended that key agenda items/issues should come out from the questionnaire. On its part Mozambique had a specific proposal which is “Coordination and collaboration between projects at national level”.

As far as the venue for the planed regional is concerned, Seychelles and South Africa registered that anywhere is fine with them. However, South Africa recorded that it may send some proposal later on. Mauritius indicated that any venue on the mainland is fine except Kenya. Madagascar reported that Madagascar is not politically stable at the moment so would propose Zanzibar to host the meeting. It reported further that Dr John BEMIASA who is the DM will attend the meeting. Kenya proposed the venue to be in Mauritius. On its part Mozambique proposed the venue to be in South Africa and specifically in Capetown, or Durban. If not then it should be Zanzibar in Tanzania.

**10. Visit to local partners during the mission**

**Seychelles**

(i) On 19th May 2010 the RC in the company of the Seychelles NC visited ICS (Island Conservation Society) between 1030 and 1130 hrs. At ICS the RC was introduced to the Director ICS and the Chief Scientist. The meeting ensued and the RC informed the Director of ICS the purpose of his mission and the courteous call. The presentation was done following the order of **Appendix** III. This was followed by discussion during which the Director expressed that ICS was eager and willing to positive collaborate in ODINAFRICA activities at nation level and to support the NC in his work. He however said that ICS has very limited staff, therefore he requested the NC coordinator to keep them up-to-date so the can know and decide in a timely manner which activities they will participate or help. In particular the Director was interested much with the development of a national marine atlas and said that his organisation can contribute much in that activity. He said that the ICS promotes the conservation and restoration of island ecosystems, sustainable development of islands, and awareness of their vulnerability and vital importance to the planet's biodiversity. He added that they have done a lot of work on that direction and therefore they have something to share and contribute.

(ii) On 20th May 2010 from 1400hrs the RC meet with the national coordinators of ODINAFRICA, NC-CHM and ASCLME (data & Information). This meeting was organised after the RC realized that there was an apparent confusion on how the three projects were supposed to be collaborating. This was clarified by the RC during the meeting. The three national coordinators promised that, now that they understand clearly how they were supposed to collaborate they will work together to for the success of the three projects. It was emphasized that the three projects should work together in implementing ODINAFRICA activities at national level. Several other matters pertinent to the projects at national level were discussed during the meeting.

**Mauritius**

1. On 4th June 2010 the RC accompanied by the NC visited Albion Fisheries Research Centre which is also the ODINAFRICA Information Centre for Mauritius. At Albion the RC and the NC met with the Director of Albion who also invited and introduced the newly employed Information Manager. The RC explained the purpose of the visit in accordance to **Appendix** III and requested the continued active participation of Albion in ODINAFRICA. He also urged the new Information Manager to apply for the basic training courses in information management once they will be announced. The Director expressed his commitment for Albion to continue to be an active member of ODINAFRICA. He explained that Albion was going through some internal problems which were geared at merging Albion into another institution which caused it to a bit non active. However, he added that the problems have been resolved and that Albion is now working had to get back on track, and assured the RC and the NC that his Centre will actively participate in ODINAFRICA as it has been doing before.

**Madagascar**

While in Madagascar on 9th June 2010 visited two local partners of the Madagascar NODC to inform and brief them about the start of ODINAFRICA-IV, and explore their capacities and roles they could play in the new phase. The partners visited and the potential roles they could play in ODINAFRICA are as follows.

(i) Foiben-Taosarintanin' i Madagasikara (FTM) <http://www.ftm.mg/home.htm>. This was visited during the morning from 0900hrs. The RC met with Mrs Nivo Ratavoarison who is the head of the mapping division. FTM has a long and wide experience in mapping and cartography and has a lot of data and maps on Madagascar and its neighbours. Additionally, Mrs Nivo is the Chair of the East Africa Division for UNGEGN i.e. UN Group of Experts on Geographical Names. At her capacity she had enabled FTM to play a key role in documenting geographical names in the region. Based on its strength in mapping and cartography FTM could play a key role in product development in ODINAFRICA-IV for Madagascar for example the national marine atlas.

Following in-depth discussions Mrs Nivo explain that she was very happy with the visit of the RC because now she understood clearly how FTM could collaborate with and participate in ODINAFRICA-IV. She expressed that FTM is willing to collaborate and support ODINAFRICA-IV.

(ii) In the afternoon from 1430hrs the RC visited the REBIOMA which is a Research Project on the Biodiversity of Madagascar. This project is facilitated by Wildlife Conservation Society (WCS). At REBIOMA the RC met with Mr Dimbly and his team. During discussion Mr Dimbly explained the work and products they have done and developed. He presented one of the currently finished products to the RC which is a Numerical atlas of the system of the protected areas of Madagascar. He further explained that the atlas is mainly terrestrial and is also available online at <http://atlas.rebioma.net>.

Mr Dimbly explained that he was very pleased with the visit and said that WCS is ready and open for the collaboration with ODINAFRICA-IV. He said that WCS has a wide experience on the development of demand driven products and has a lot of variety of data which be accessed by ODINAFRICA.

(iii) Centre National de Recherches Océanographiques (CNRO) is located on the Nosy-Be island. The RC visited the National Oceanographic Research Centre between 10th and 11th June 2010 where he met with the Director of CNRO – Mr Toussaint Jean Paul. Their two days discussions apart of focusing only at the start of ODINAFRICA-IV also focussed on the possibility of re-installing a tide gauge at Nosy-Be. On the start of ODINAFRICA-IV Mr Toussaint happily welcomed the news and promised to actively participate in ODINAFRICA activities as required. He explained that CNRO could contribute in ODINAFRICA its data and experience in oceanography.

On the tide gauge the RC explained to Mr Toussaint that ODINAFRICA is still interested and would like to help install a new tide gauge at Nosy-Be to be operated by CNRO. He explained that Nosy-Be is seen by the oceanographic community as one of the critical and best areas in the region to have a tide gauge. He challenged Madagascar through Mr Toussaint by wondering why it does not see or accord proper importance to the installation of the new tide gauge as the World oceanographic community. He explained that while ODINAFRICA through IOC was ready to install the tide gauge the recipient country have to build the installation house for the gauge and be willing to operate it. He noted Madagascar needs to repair the pier and the house before the tide gauge could be provided. Mr Toussaint explained that currently only 1 – 3 meters of the pier is still yet to be repaired. He explained that the first half of the pier (about 40 meters) was repaired by a tourist partner who is hotelier. Mr Toussaint explained that the Government of Madagascar four years ago promised to provide funds for the repair of the pier and house but it has not yet done so.

The RC and Mr Toussaint explored ways of getting funds for the repair and agreed as follows. (i) Mr Toussaint to follow up on the matter again with the responsible ministry i.e., Ministry for Higher Education and Research (ii) Madagascar to try and source support for the repair from other stakeholders for example the ASCLME project. (iii) the RC to discuss the matter with Madagascan Government officials he meets during his visit to bring it to their attention.

(iv) On 14th June 2010 afternoon from 1400hrs the RC visited the Ministry of Environment of Madagascar where he met with the Director of Environmental Information Mr RAKOTOARIJAONA Jean Roger who is also the Data and Information Coordinator for Madagascar for the ASCLME project. The discussions ranged from the starting of ODINAFRICA-IV to collaboration between ODINAFRICA (NODC) and the ASCLME project at national level. Mr RAKOTOARIJAONA was pleased with the visit of the RC saying it helped clarify ODINAFRICA and its activities, and the roles other stakeholders could play. He also said the visit cemented the collaboration between ODINAFRICA and the ASCLME project at national level. Mr RAKOTOARIJAONA explained that the ASCLME project in Madagascar has been collaborating closely with the NODC in the MEDA development and in other issues. He however noted that, the NODC, which is based in Toliara, is a bit far away from the majority of the stakeholders but said that this has so far not hindered swift collaborations. The RC then brought up the issue of installing a new tide gauge at Nosy-Be. After through discussion on the issue Mr RAKOTOARIJAONA promises to follow it up as appropriate but noted that currently the political situation was not stable in the country and it would be difficult to get the required support on the issue from politicians.

**Kenya**

(i) On 29th September 2010 the RC accompanied by the NC visited the Coastal Oceans Research and Development in the Indian Ocean (CORDIO) head offices located in Mombasa. At CORDIO the RC and NC had discussions with Dr David OBURA who is the Coordinator for CORDIO East Africa, and his team. Among other things, during the discussions the RC explained the modalities for and invited CORDIO to actively participate in ODINAFRICA. On his part Dr OBURA thanked the RC and NC for the visit and explanations and expressed the willingness of CORDIO to actively participate in ODINAFRICA. He praised the current setup of the ODINAFRICA project saying it is more encompassing and aimed at addressing the needs of the stakeholders. He further said that, on its part, CORDIO is interested in two areas that could be built-in on the marine atlas. These are (i) resilience of corals as one of the scenarios to run on top of the atlas (ii) marine spatial planning and analyses i.e., how to make coral data useful in spatial planning. This could also be built-in in the atlas. (iii) marine/coastal programmes.

(ii) On 30th September 2010 the RC visited the Early Warning Unit at UNEP Gigiri in Nairobi. He met with Mr Akiwumi with his team comprise of Mr Theuri Mwangi and Ms Esther Maina. The RC explained the start of ODINAFRICA-IV and the new setup of the project which is focused on product development and involvement of stakeholders. He appreciated the close collaboration between UNEP and ODINAFRICA-III and invited the meeting to discuss ways of furthering these collaborations into ODINAFRICA-IV. The RC elaborated that one area in which ODINAFRICA-IV and UNEP could collaborate is in the establishment of clearinghouse mechanisms nodes in the Western Africa region. On his part Mr Akiwumi explained that they are more interested in issues of regional priority. He however, said that currently there was no funding available. On the possibility of collaboration between ODINAFRICA and Nairobi Convention to set up clearinghouse mechanism nodes in West Africa, he said that could be well answered by Mr Dixon Waruinge who is the Coordinator of the Nairobi Convention.

On his part Mr Mwangi the two projects need to go beyond the science and add policy issues to data which many donors will be willing to support. He explained that this is that third step in the process which is usually not done. He mentioned the first two steps as (i) gathering of data and (ii) analysing the data. He further explained that after analysis if there is a gap and appropriate policy issues have been developed, donors like GEF could most probably be willing to support. He gave an example of the mangrove data compilation of up to 1991 which had measurable outcome, e.g., policy on mangrove resource utilization and management. He elaborated that one potential outcomes from data collected by ODINAFRICA and The Nairobi Convention could be marine ecosystem spatial planning to regulate tourism and fisheries activities. Mr Mwangi concluded by noting however that data management capacity is still lacking in the region.

(iii) In the afternoon on 30th September 2010 the RC met with Mr Gabriel Grimsditch who is a Programme Officer in the UNEP’s Marine and Coastal Ecosystems Branch, Division of Environmental Policy Implementation. Mr Grimsditch was accompanied by a colleague from the same Branch. They The two were very pleased with the setup and organisation of ODINAFRICA-IV as it focused on enabling demand driven activities at national level. Mr Grimsditch and his colleague expressed their great interest in the African Marine Atlas initiative and supported the idea of having it to start at national scale as that will make it more useful. They said that they are interested in Spatial Planning and would like to cooperate with ODINAFRICA along that line. They invited the PM to initialize communications to chart down the collaborations.

(iv) On 1st October 2010 the RC was again at Gigiri UN compound to visit the UNEP Nairobi Convention secretariat. He met with Mr Dixon Waruinge who is the Coordinator of the Nairobi Convention with his team comprised of Ms Esther Maina and Ms Nancy Soi. At the meeting the RC started by appreciating the good and close collaborations between the Nairobi Convention and ODINAFRICA since ODINAFRICA-III. He then explained in detail the purpose of his mission which was to (i) inform UNEP-NC of the start of ODINAFRICA-IV and invite them to continue collaborating with ODINAFRICA and (ii) explore new areas of collaboration between ODINAFRICA and UNEP-NC, for example the establishment of clearinghouse mechanism nodes in the west Africa region.

On his part in responding to the RC comments Mr Waruinge happily welcomed the start of ODINAFRICA-IV and hope it is successful. He then focused to the discussion at hand and explained that the UNEP-NC is willing and will continue to collaborate with ODINAFRICA as it has done in the past. In particular he said UNEP-NC agrees on sharing of available data and in providing services. He however said that there should be agreement on the use, access and sharing. Sharing should observe access rights to data and information. On the technical part he said the systems used by the two parties should be interoperable. Mr Waruinge summarized that, that way the two parties shall share information, have joint publications, and co-share in activities.

On the African Marine Atlas Mr Waruinge said it is important to agree on how the two parties can produce the Atlas together. They need to know who is in the national working teams of the clearinghouse mechanism and Atlas team. Mr Waruinge elaborated that if they could use the same institutions and people it could strengthen and smooth the collaboration.

Noting the lengthy timeline needed for the development of the African Marine Atlas, Mr Waruinge strongly recommended development of an intermediate product for which he proposed “a State of Coast of the East African (WIO) Region”. He said this could highlight themes like socioeconomics, habitats etc. He recommended that this product should preferably be ready by 2012.

Regarding the possibility of ODINAFRICA and UNEP-NC collaborating in establishing clearinghouse node in the West African region Mr Waruinge reported that a funding proposal which supports creation of clearinghouse nodes for the Abidjan Convention region has already been submitted. However, it is not yet known/established who will do it for them. He said that ODINAFRICA could come in here with the eastern Africa experience. The person who should make the decision is Mr Abbu. He recommended that the PM liaise with him as soon as possible to follow up on this with Mr Abbu.

**Mozambique**

(i) On 5th October 2010 in the morning from 0900hrs the RC accompanied by the NC and DM paid a courteous call to the Director of INAHINA. The RC explained to the Director the start and new setup of the ODINAFRICA-IV project, and requested the continued support of INAHINA to ODINAFRICA and the NODC. The Director in his remarks said was very pleased with the visit of the RC saying it shows the close follow up on the implementation of the project as well as interaction of the project leadership. He promised his continued full support of ODINAFRICA and the NODC in the fourth phase.

(ii) On 6th October 2010 the RC accompanied by the NC of Mozambique visited one of the ODINAFRICA partners in Mozambique which is the National Institute of Meteorology famously known as INAM. At INAM the RC and the NC met with the Deputy Director, Mr Atanasio Joao Manhique, with his team of several scientists and technicians. The RC explained the purpose of his mission and visit to INAM in the order of Annex II. This was followed by some questions and answer session during which the RC answered several questions raised to clarify further of ODINAFRICA and its envisaged activities and implementation at national level. The Deputy Director on his part focused on INAM involvement in ODIAFRICA by explaining available capacity. He said that INAM does not yet have a dedicated section on marine meteorology but has several meteorological stations along the coast, and several tide gauges that are working. He added further that INAM has a wave modeller although currently he is not working on that really. He promised that INAM will discus further with INAHINA (which is the NODC for Mozambique) as far as ODINAFRICA and the atlas is concerned and decide what INAM will contribute and its role in the national atlas team. He emphasized that major issues e.g., coastal erosion etc may need to be decided in line with MICOA (Ministry of Environment).

**South Africa**

(i) From Mozambique the RC flew to South Africa where he had three stops to visit. The first visit to SAIAB in Grahamstown was done on 7th Oct 2010 from 1030hrs. The RC met with the Information Manager at SAIAB, Mr Willem Coetzer. The RC briefly explained to Mr Coetzer the purpose of his mission which involved informing on the start of phase four of ODINAFRICA, its setup and organization and requesting for the active participation of SAIAB in the project at national level. In his remarks Mr Coetzer was very pleased with the visit and welcomed the start of ODINAFRICA-IV. He explained that he was particularly pleased with the atlas initiative in which he said SAIB could play a key role given the large amount of data they have. As to SAIAB itself he said it has the national fish collection, and there are also insect collections. SAIAB also have specimen information of fish species. Eighty percent (80%) of these have coordinates which means can be plotted on maps. Mr Coetzer noted that this information could be used for the African Marine Atlas explaining that SAIAB data exchange policy is open access. He concluded by informing that SAIAB has recently started to collect data on frogs.

(ii) On 8th October 2010 while still in Grahamstown the RC visited the South African Environmental Observatory Network (SAEON) where he met with one of the data managers Mr Shawn Deyzel from 100hrs. As usual the RC explained the purpose of his mission and briefly outlined the organisation of ODINAFRICA-IV to Mr Deyzel. He finished by requesting SAEON to actively collaborate in ODINAFRICA-IV at national level. In his responses Mr Deyzel said that he was pleased with the start of ODINAFRICA-IV and its setup, and hoped it will be a beneficial project to Africa. He explained that SAEON has two coastal nodes and have a huge amount of oceanographic data. However, with regard to the collaboration between SAEON and ODINAFRICA he explained that SAEON has some key data and information managers. He said that ODINAFRICA needs to get in touch with these key and influential people to establish official collaborations.

(iii) On 11th October 2010 the RC visited the Oceanographic Research Institute (ORI) which is located in Durban. At ORI the RC met with the Director, Prof. Rudy van der Elst who is one of the most experienced researcher and academician in the region. The RC started by informing the Director on the start of phase four of ODINAFRICA and explained in detail the organisation and focus of ODINAFRICA-IV. The RC then explained to Prof. Rudy the envisaged process of implementation of ODINAFRICA-IV, and in regard to that the importance of collaboration among projects. The RC detailed the collaborations between ODINAFRICA and (i) ASCLME project (ii) Nairobi Convention Clearinghouse Mechanism (NC-CHM) (iii) NGO’s (v) SWIOFP and AMESD.

In his response in addition to appreciating the visit of the RC Prof. Rudy explained that him and ORI in general have had contacts with ODINAFRICA but not serious engagement. He expressed his strong support to ODINAFRICA-IV and its concepts but cautioned that it requires energy to ensure success. Furthermore, he explained that stakeholders in SA are confused with the existence of many projects/programmes which are aspiring to implement and achieve virtually the same thing. Prof. Rudy emphasized that there is a need to articulate a clear image of how the various projects work i.e. clarity of who is doing what. Prof. Rudy emphasized that the Coordinators of the various projects in the region i.e. Mika ODIDO, Dixon WARUINGE and David (ASCLME) and SAEON should prepare a document detailing their activities and inter-linkages to clarify who is doing what.

With regard to ODINAFRICA at national level, Prof. Rudy noted the MCR Act which divided MCM into two independent components (i) Fisheries and (ii) Environment. He said that MCM through the NODC should/needs to bring all players together. He explained that SA has a number of coastal provinces and thus there is a need to get involvement of people from these provinces as most of the responsibilities lies on provincial level. He said that SA needs to get a national leader who has passion. For ODINAFRICA activities, he said, the first step should be to make an inventory of metadata.

With regard to the possible contribution of ORI in the implementation of ODIAFRICA-IV Prof. Rudy explained that ORI is strong in spatial mapping and have a lot of all the data identified for the marine atlas at national level. He said that ORI is happy and willing to collaborate in the implementation of ODINAFRICA-IV. Prof. Rudy explained that ORI has been a lead institution in the maintenance and management of WIOFish database which could be used by ODINAFRICA. In addition, Prof. Rudy explained that ORI has played a key role in the implementation of the Integrated Coastal and Marine (ICM) Act which among other things established set-back lines for coastal activities. ORI has been actively involved in monitoring the five parameters invoked in the Act which are (i) beach width (ii) slope (iii) vegetation (iv) angle of coast and (v) … This could be a great input into the national marine atlas. Prof. Rudy finished by elaborating that ORI has a mission which is focused on solving problems i.e., to make information available to solve prevailing/present problems. He emphasized that this is one of the strongest area of ORI. He explained that ORI has strong technical capacity in field survey as well as underwater capacity. It has a rich marine science library and fifteen (15) postgraduate students with Kwazulu Natal University.

The RC then asked Prof Rudy, based on his great and wide spectrum of experience in oceanography as well as marine and coastal issues in the region, to provide his view and/or guidance on some of the key issues of interest for the region as follows.

First the RC requested Prof. Rudy to assess and provide guidance on capacities available and capacity development needs in the region. In his response Prof. Rudy noted that he understands that the SWIOFP is doing capacity needs focused on the fisheries sector. However, he noted that the region is weak in (i) ecological modelling and (ii) fisheries (fisheries stock assessment model) modelling.

Secondly, the RC wanted to know from Prof. Rudy, based on his experience in the region, what could be the major/high priority capacity needs. Prof. Rudy responded (i) the region is weak in scientific writing particularly in terms of language and proposal. He said that both analytical and writing skills are very weak; (ii) spatial analysis is weak in the region (iii) project planning and budgeting/management, and (iv) there is a problem of language barriers. He noted that Capetown University is strong in most of the areas mentioned and could be used to alleviate the situation. In addition he proposed that (i) an inventory of capacity of key institutions in the region be done and (ii) to repeat the work with Okemwa on capacity assessment.

Thirdly the RC noted that there has been many training workshops in the region for the past years, but still the region still needs more training in virtually same areas e.g. GIS and RS. He wanted to know from Prof. Rudy what he thinks could be the problem. Prof. Rudy responded that training for training sake, as has been happening in the region, does not help. He enlisted some of the key issues that need attention as follows: (i) people proposed for training are usually not the right ones. He noted that usually senior staff members are proposed (ii) training should be based on (regional) needs (iii) there should be a follow up after training e.g., for a training of fisheries observers an observer deployment programme and (iii) usually it is same people in all training – the selection process needs to be improved to enable many right people to be selected.

Fourthly, the RC wanted to know from Prof. Rudy’s experience in the region what the key issues in the ASCLME region are. Prof. Rudy responded simply and clear that its working together and harmonizing of approaches i.e. establishing practical regional collaborations among projects/programmes. He noted that the consortium established under WIOMSA and the Nairobi Convention is not very fine.

(iv) While in Capetown on 15th October 2010 from 0900hrs the RC visited SAEON where he met with Dr Juliet Hermes who is the Manager of SAEON Egagasini Node. After the RC finished explaining the purpose of his mission and outlining the organisation of ODINAFRICA, he requested SAEON to actively collaborate with ODINAFRICA at national level to ensure a successful phase four. In her response Dr Hermes said she was very pleased with the visit as well as the news on the start of phase four of ODINAFRICA. She said SAEON is happy and willing to actively collaborate with and participate in ODINAFRICA-IV but they only need to be informed i.e., kept up-to-date.

**Tanzania**

On 18th October 2010 in the morning from 1000hrs the RC met with the Head of the Department of Aquatic Sciences and Fisheries (College of Natural and Applied Sciences), Dr Rashid TAMAHTAMAH. This department used to be the Faculty of Aquatic Science and Technology (FAST) before the internal aggregation changes took place at the University of Dar es Salaam. The RC explained to Dr TAMARTAMAH on the start of phase four of ODINAFRICA. He explained that the new phase is structure to bring more activities at national level and foster collaborations at national level among stakeholders and service providers. He Invited Dr TAMAHTAMAH to continue the collaborations that have existed between the NODC and the then FAST. In his response Dr TAMAHTAMAH thanked the RC for the visit and expressed his confidence in the success of ODINAFRICA-IV. He promised that his department will participate actively in all relevant ODINAFRICA activities. Dr TAMAHTAMAH further explained that the existence of his department within the College of Natural and Applied Sciences provides more avenue for collaboration with ODINAFRICA. He requested the RC to get in touch with him if he needs to access expertise from any of the other departments of the College.

In the afternoon at 1430hrs the RC went to meet the Coordinator of the Tanzania Marine Parks. Unfortunately, when the RC arrive at the marine Parks the Coordinator was not in office and the RC was informed that he went to attend an emergency meeting which was important at the ministry.

**11. Summary comments and recommendations**

The mission of the RC to all NODCs in the ASCLME region ended successfully towards the end of October 2010. The mission was particularly important in setting up a good partnership environment and morale at national level as phase four of ODINAFRICA was starting. The RC met with NCs, DMs, IMs and Head of Institutions in all countries of the ASCLME region except only for the Comoros. Additionally, the RC met with local partners who were working with NODCs in respective countries.

The RC also met with major projects/organisations who are partners of ODINAFRICA. This helped in building confidence and partnership spirit in the region among projects.

Several important issues emerged during the mission. Here only some of the few critical ones are outlined in summarizing this report. The many others are detailed in the report.

1. One of the main issues since the start of ODINAFRICA has been on finding a way to make local stakeholders, particularly governments, appreciate the role played by NODCs and thus make them want to ensure existence on NODCs, and thus support them. However, still most of the NODCs in the region are still operating as a “project” rather than as an institution. The main reason for this situation is the lack of full support from the governments. This is a bit a surprising situation (i) because all responsible government officials appreciate the importance of having an NODC and the role of ODINAFRICA in building their capacity and (ii) considering the importance of ocean data and information management and the role NODCs can play in helping the governments in tackling the multifaceted issues on coastal and marine management/planning and others. Clearly, a committed political determination/commitment is lacking. ODINAFRICA needs to make more concerted efforts to put ODINAFRICA at the centre of political discussion in the region. Two approaches are proposed here:
	1. Organise a ministerial conference on ocean data and information management. This option could result into immediate impact. However, it is understandable that this approach is costly and thus may require extra resources that could be difficulty to secure. It is therefore recommended that this approach should only be considered and given a chance when it is possible.
	2. ODINAFRICA should engage proper platforms of political decision makers e.g. the African Union, and secure slots for presentation and discussions during the meetings, for example, of Heads of States or responsible ministers. This approach is very feasible as it will involve only one or two people, and could help ODINAFRICA to put ocean data and information management at the centre of politicians who are key decision makers.
2. There is a need for ODINAFRICA to train a new batch of younger DMs and IMs to fill the gap of the now senior staffs who are increasingly getting busy with administrative responsibilities. Furthermore, some countries (e.g., Seychelles) have very high staff mobility which has left NODCs without trained personnel.
3. The need for collaboration among projects in the region has been cited by several NCs and coordinators of some of the projects operating in the region. In general the majority of the coordinators of projects see collaboration among projects as a way forward that could help maximise through put in making things happen particularly through efficient resource mobilizations. However, for this to happen the different projects need to enter into agreements which will clearly specify who is doing what to avoid conflicts and duplication, and to agree on sharing of their facilities. At another level, projects could develop products together by sharing costs. A good example is the proposed atlas book between ODINAFRICA and the Nairobi Convention.
4. The collaboration among projects in the region has also been requested by the local players, including experts, at national level as has been detail elsewhere in this report. The presence of many projects in a country doing virtually somehow similar things ends up causing confusion among stakeholders who are usually the same group. Thus the collaborations among projects need to trickle down from project level to national level to eliminate or reduce this confusion.
5. ODINAFRICA NODCs need to develop products and service to fill policy gaps to justify their relevance. This could be achieved by for example developing policy briefs products. Together with this it is also important for NODCs to start providing media brief products on current/relevant events.
6. It is important for NODCs to know the stakeholders group for which they are making/planning a product. That way it will be easy to understand the requirements of the stakeholders and address them.
7. ODINAFRICA should find a way to help Madagascar (and other NODCs with similar problems) with its InMagic database problem.
8. Many GIS and Remote Sensing (RS) training initiative have been undertaken in the region, however, the GIS service continue to be not readily available in most NODCs.

**List of abbreviations and acronyms**

**AMESD** African Monitoring of the Environment for Sustainable Development

**ASCLME** Agulhas and Somali Current Large Marine Ecosystem

**ASFA** Aquatic Sciences and Fisheries Abstracts

**BCLME** Benguela Current Large Marine Ecosystem

**CDA** Coastal Development Authority

**CNRO** Centre National de Recherches Océanographiques

**CORDIO** Coastal Oceans Research and Development in the Indian Ocean

**CRCP** Coral Reef Conservation Project

**CSIR** Council for Science and Industrial Research

**CTD** Conductivity-Temperature-Depth (used to measure water characteristics like salinity, temperature, pressure, depth and density)

**DC** Data Centre

**DM** Data Manager

**FAST** Faculty of Aquatic Science and Technology

**FTM** Foiben Taosarintanin’i Madagascar

**GIS** Geographical Information System

**IAMSLIC** The International Association of Aquatic and Marine Science Libraries and Information Centers

**IC** Information Centre

**ICM** Integrated Coastal and Marine

**ICS** Island Conservation Society

**IHSM** Institut Halieutique et des Sciences Marines

**IM** Information Manager

**INAHINA** Instituto Nacional de Hidrografia e Navegação (National Hydrographic and Navigation Institute)

**INAM** Instituto Nacional de Meteorologia (National Institute of Meteorology)

**IT** Information Technology

**KeNODC** Kenya National Oceanographic Data Centre

**KICAMP** Kinondoni Conservation Area Management Project

**KMA** Kenya Meteorological Authority

**KMFRI** Kenya Marine and Fisheries Research Institute

**MCM** Marine and Coastal management

**MCS-Sey** Marine Conservation Society Seychelles

**MICOA** Ministério para a Coordenação da Acção Ambiental (Ministry of Environment)

**MNP-CHM** Madagascar National Parks – Clearinghouse Mechanism

**MOI** Mauritius Oceanographic Institute

**MPRH** Ministere de la Peche et de Ressources Halieutiques

**NC** National Coordinator

**NC-CHM** Nairobi Convention Clearinghouse Mechanism

**NEMC** National Environment Management Council

**NGOs** Non-Governmental Organisation

**NODC** National Oceanographic Data and Information Centre

**ODINAFRICA** Ocean Data and Information Network for Africa

**ODV** Ocean Data View

**ORI** Oceanographic Research Institute

**PM** Project Manager

**PSC** Project Steering Committee

**RC** Regional Coordinator

**REBIOMA** Research on the Biodiversity of Madagascar

**RS** Remote Sensing

**SADCO** Southern African Data Centre for Oceanography

**SAEON** South African Environmental Observatory Network

### SAIAB [The South African Institute for Aquatic Biodiversity](http://www.google.no/url?sa=t&source=web&cd=1&ved=0CBgQFjAA&url=http%3A%2F%2Fwww.saiab.ac.za%2F&ei=Gtn8TayKPMnEswa8yJnxDQ&usg=AFQjCNHbZw_ITT45F_hf8uRSBE-mkfYoug)

**SANParks** South African National Parks

**SFA** Seychelles Fishing Authority

**SWIOFP** South West Indian Ocean Fisheries Project

**TAFIRI** Tanzania Fisheries Research Institute

**TCMP** Tanzania Coastal and Management Partnership

**TMA** Tanzania Meteorological Agency

**TPA** Tanzania Ports Authority

**TzNODC** Tanzania National Oceanographic Data and Information Centre

**UDSM** University of Dar es Salaam

**UNEP** United Nations Environment Programme

**WCS** Wildlife Conservation Society

**WIOMSA** Western Indian Ocean Marine Science Association

**General guiding questions during assessment missions at NODCs**

1. What is the current status of your Agreement? If not yet signed why?
2. Have you submitted your due progress report?
3. Collaboration with other projects/institutions etc (*Here explain the existing collaborations between the ASCLME, Clearinghouse and SWIOFP. Then stress on the need for further collaborations at national level including NGOs and other projects and/or programmes/institutions*)
4. ODINAFRICA-IV is focused on product development to serve stakeholders, whereby the Atlas is an icon product being developed. Based on the available capacities and experience at your NODC, what do you think about this objective, can this be achieved?
	1. What other products do you plan to develop including those that will run on top of the Atlas?
	2. What is the status of the Atlas development at your NODC/country?
		1. Atlas Team leader selected.
		2. National Atlas team formed.
		3. What is the progress so far?
5. Considering the Questionnaire on available capacities that was circulated to all participating countries by the Project Manager just at the start of ODINAFRICA-IV, what do you think is the weakest area/part/point for your NODC? Ie the major weakness of the NODC that could hinder the success of ODINAFRICA.
6. Implementation of ODINAFRICA-IV (*Here discuss on detail the major items in the implementation of ODINAFRICA-IV as itemised below*)
	1. National meetings (*here stress on the need of involving all key players, that the NODC is a lead institution but should not decide by itself on key national issues and focus; and that funds set aside for this activity should not be used for other activities*).
	2. Development of scenarios to run on top of the Atlas (*Here stress the need of involving all key national players so they will play a key role in the development of scenarios. Stress for each country, through their national meetings to identify national key issues and prioritize them so it is easy to decide what scenarios will be developed first. Stress also for differences between countries, for example while cyclones are key issues for Mauritius they are not as far as Tanzania is concerned. This means we expect a scenario, say for tracing/predicting cyclones/roots on the Mauritius national Atlas and something else on the Tanzania national atlas*).
	3. National outreach (*Here stress that this may involve products and/or activities. Also stress that wherever possible the NODC should use the funds set aside for this activity as leverage to teaming up with other stakeholder(s) in implementing an activity. Stress also that, same as for funds for national meetings, funds set aside for outreach should be used only for the intended purpose*).
7. Questionnaire – going through the questionnaire.
8. Handing and discussion of the “Additional Information” questionnaire?
9. Handing and discussion of questionnaire responses from partner institutions/projects/programmes.
10. Websites of the NODCs and host institutions:
	1. When did you last update?
	2. Stress on the need of regular updating the NODC homepages and the pages on the NODC on the host institution homepage.
11. Any comments from the NODC?
12. Proposal for the planned regional meeting:
	1. Agenda
	2. Venue
13. Wrapping up.

**General guiding discussion points during with partner organizations/projects**

1. ODINAFRICA –IV (*Here elaborate the focus as well as the management of ODINAFRICA-IV focussing on the issues below*):
	1. Regions (explain why the regions)
	2. Focus (Product development to server stakeholder; explain that Atlas is icon product and details its development from national to regional levels and why,)
2. Implementation of ODINAFRICA-IV (*Here discuss on detail the major items in the implementation of ODINAFRICA-IV as itemised below*)
	1. National meetings (*here stress on the need of involving all key players, that the NODC is a lead institution but should not decide by itself on key national issues and focus; and that funds set aside for this activity should not be used for other activities*).
	2. Development of scenarios to run on top of the Atlas (*Here stress the need of involving all key national players so they will play a key role in the development of scenarios. Stress for each country, through their national meetings to identify national key issues and prioritize them so it is easy to decide what scenarios will be developed first. Stress also for differences between countries, for example while cyclones are key issues for Mauritius they are not as far as Tanzania is concerned. This means we expect a scenario, say for tracing/predicting cyclones/roots on the Mauritius national Atlas and something else on the Tanzania national atlas*).
	3. National outreach (*Here stress that this may involve products and/or activities. Also stress that wherever possible the NODC should use the funds set aside for this activity as leverage to teaming up with other stakeholder(s) in implementing an activity. Stress also that, same as for funds for national meetings, funds set aside for outreach should be used only for the intended purpose*).
3. Collaboration with other projects/institutions etc (*Here explain the existing collaborations between the ASCLME, Clearinghouse and SWIOFP. Then stress on the need for further collaborations at national level including NGOs and other projects and/or programmes/institutions*).
	1. Is the institution/project/programme willing to collaborate in the implementation of ODINAFRICA-IV?
	2. What can the institution/project/programme contribute to ODINAFRICA-IV?