



Abidjan Convention Sustainable Seas pilot workshop

Grand-Bassam (Côte d'Ivoire) 18–21 June 2012

Workshop report



The Abidjan Convention Sustainable Seas pilot workshop has been organized by the Abidjan Convention Secretariat and GRID-Arendal under the auspices of the Abidjan Convention and UNEP, with contributions from the Institute of Marine Research (Norway), the World Wildlife Fund and ODINAFRICA.

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Background

Life on earth is fundamentally and inextricably linked to the marine environment. Our oceans and seas regulate global processes such as climate and weather and provide us a vast array of goods and services: food, energy, minerals, medicines, transport and social services for society. The ocean's "natural capital" is however globally depreciating due to the cumulative effects of human activities and unsustainable management practices. Besides everyday impacts from human use, climate change effects such as sea-level rise, increasing temperatures and ocean acidification all put additional stress on the marine environment.

Coastal communities from Mauritania to South Africa (the region of the Abidjan Convention) are particularly vulnerable to changes in their environment because of their dependency on marine resources and sensitivities to climate change risks and pollution. The expansion of the offshore oil and gas industry in the region offers opportunities for socio-economic development in this regard; at the same time, it's possible environmental impacts threaten livelihoods and well-being of coastal communities. Yet their voices often remain unheard when socio-economic decisions are being taken at the national and international level. Concurrently, the historical knowledge of these same communities contains a vast and often ignored "database" of adaption and balanced management experience that would benefit all societies from developed to developing.

Future welfare of human populations in the region will therefore depend to a large extent on the capacity of countries to manage uses and impacts in order not to undermine the health and resilience of the marine ecosystem.

Ecosystem-based management (EbM) is a holistic, integrated approach that looks at marine and coastal ecosystems as units with many ecological and social links. Essential in this process is the balance between the needs and interests of the different stakeholders and safeguarding the marine environment and its rich biodiversity, in contrast to the traditional sectorial approach to management.

Ecosystem-based Management has six core principles:

- Applying an ecosystem services perspective, where ecosystems are valued not only for the basic goods they generate (such as food or raw materials) but also for the important services they provide (such as clean water and protection from extreme weather).
- Understanding and addressing the cumulative impacts of various activities affecting an ecosystem.
- Managing for and balancing multiple and sometimes conflicting objectives that are related to different benefits and ecosystem services.
- Embracing change, learning from experience, and adapting policies throughout the management process.
- Involving stakeholders centrally in all stages of EbM planning and implementation

Implementation of Ecosystem-based management can be achieved through introducing a monitoring-assessment-management cycle in the marine management (fig.1.).

Access to and availability of sound and reliable environmental data, knowledge and information and the necessary skills to collect, manage and interpret these data are an important aspect of successful

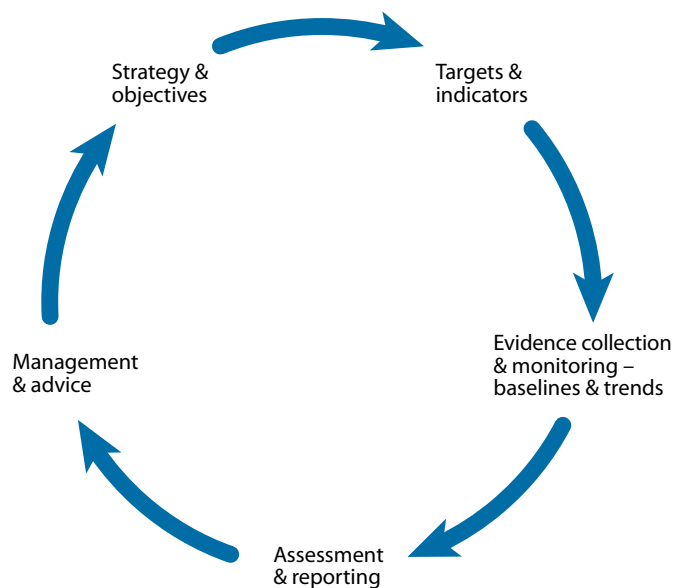


Figure 1. Ecosystem-based Management is based upon a monitoring-assessment-management cycle.

- Recognizing connections among marine, coastal, and terrestrial systems, as well as between ecosystems and human societies.

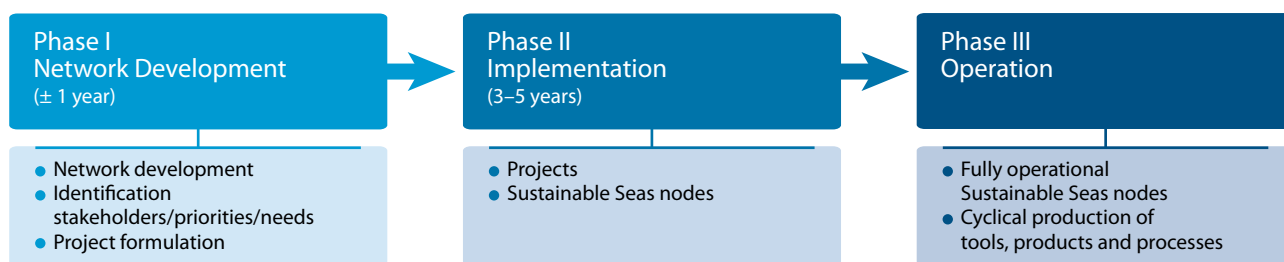


Figure 2. Phases in project implementation.

EbM. Furthermore, integration, translation and communication of this information into marine policies is essential, while at the same time, awareness raising is needed to put these issues on the national and international political agendas.

The Sustainable Seas programme of UNEP/GRID-Arendal is aimed to develop capacity in developing countries for sustainable management of the marine environment. This programme builds further on the achievements of UNEP/GRID-Arendal with the UNEP Shelf programme. Where the UNEP Shelf programme is focused on delineation of the outer limits of the continental shelf, the Sustainable Seas programme now wants to support developing states in the growth towards sustainable management of the zones under their jurisdiction through the support with specialized tools, products and services, developed in cooperation with Norwegian and other international expertise. Custom assistance and training has been delivered to over 60 developing states in the UNEP Shelf Programme.

The Sustainable Seas programme is aimed to:

- Support developing states with the production of specialized products, processes and tools for Ecosystem-based Management, through co-development with international experts and regional experts through capacity building activities.
- Build further on the achievements of the UNEP Shelf Programme.
- Be independent of major donor funding in the long term.
- Enhance participation in global processes such as the Convention on Biological Diversity, the UN Regular Process and UNCLOS.

The proposed capacity development programme in the region of the Abidjan Convention focuses on the core competencies of GRID-Arendal: direct technical training, realistic marine spatial planning and communicating marine priorities. Needs and priorities will be identified in phase I of the project, and will be used as a basis for projects in Phase II.

The regional implementation of the programme will consist of 3 phases:

Phase I of the Sustainable Seas capacity development programme is targeted towards the identification of capacity development needs of the participating states, by means of a pilot workshop and an identification process of stakeholders, priorities and needs, and the formulation of projects. This will take approximately 1 year.

UNEP/GRID-Arendal is currently cooperating with the Abidjan Convention Secretariat to initiate the Sustainable Seas programme in the region (phase I). This report summarizes the outcomes of the Abidjan Convention Sustainable Seas Pilot Workshop. This pilot workshop is aimed to identify needs and priorities for capacity building on EbM in the region. The identified needs and priorities will be used as input for a full scale programme proposal.

Specific characteristics of the programme in West Africa are:

- Five thematic areas: The EbM framework, data and information management, marine assessment capacity, offshore oil and gas environmental management and outreach and communication
- Building further on existing capacity and initiatives in the region
- Implementation through the Abidjan Convention network
- Leading to relevant products, tools and processes for sustainable management of the marine environment

Norwegian and other international experts will be involved to cooperate in the programme activities. Norway has a long history of cooperation and assistance on marine management with developing countries through the Nansen programme, collaboration between the Food and Agricultural Organisation (FAO) and the Institute of Marine Research (IMR) are funded by the Norwegian Agency for Development Cooperation (NORAD). Since 1975, the Nansen Programme carried out fisheries resources and environmental surveys in developing countries in Africa, Asia and Latin America using the vessel R/V Dr Fridtjof Nansen, operated by IMR. The early phases of the programme focused on exploration of fisheries resources for development and later resource assessments and monitoring with



Group picture – 21 June 2012 – Grand-Bassam (Côte d'Ivoire).

standardized information collection systems. The programme has been expanded in the early 1990 with capacity building activities in fisheries research and management (institutional strengthening in partner countries) and post-survey meetings with fisheries administrations. The programme focuses on countries and institutions in Northwest Africa, the Gulf of Guinea and South Western Africa, and the promotion of regional collaboration and transboundary issues. The information and data collected through the Nansen Programme are used to produce reports on the state of the fishery resources and are also stored in a database managed by IMR for the benefit of all partners.

The available archive contains valuable and scientifically unique information and data on species distribution, abundance, species interactions, environmental conditions and ecosystem characteristics.

UNEP/GRID-Arendal and the Abidjan Convention Secretariat have detailed the framework of cooperation with a Memorandum of Understanding (MOU) signed in October 2011. This MOU facilitates collaboration between the Abidjan Convention Secretariat and UNEP/GRID-Arendal on shared goals and objectives in regard to the conservation, protection and sustainable use of nature and natural resources.

Workshop approach and organization

Workshop methodology

The aim of the workshop was to identify capacity building needs and priorities for the development of a full scale programme in phase II.

Prior to the workshop, a survey was sent out to the participants to identify

- National offshore oil and gas environmental management capacity
- Assessment of Integrated Marine Management Initiatives in the region
- Identification of marine management stakeholders at the national levels.

The workshop itself was organized around 4 thematic areas, aimed to identify common priorities:

- The EbM Framework
- Involvement of the offshore oil and gas sector in EbM
- The role of marine data and information in EbM
- Marine assessments and reporting

A fifth session on “Communication and outreach” was initially foreseen as a separate topic for group discussions. Because this cross-cutting theme was discussed extensively in the first four thematic group discussions, it was not necessary to organize this as a fifth session.

Each of the four sessions was structured according to the scheme in fig.3. Introductions were provided

by experts (from UNEP/GRID-Arendal, Institute of Marine Research, ODINAFRICA and WWF). Each session was organized in 2 working groups: a francophone group and an anglophone group. Each group was led by a moderator and a rapporteur, both from the region.

The identified needs were discussed in group and lead to identified common priorities. These will be used as input (so called ‘building blocks’) for the development of a programme proposal with technical projects in Phase II, together with partner organizations.

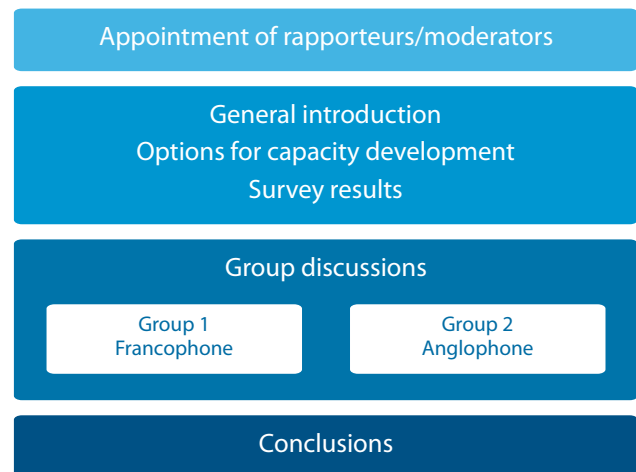


Figure 3. Session structure.



The francophone working group discussing.

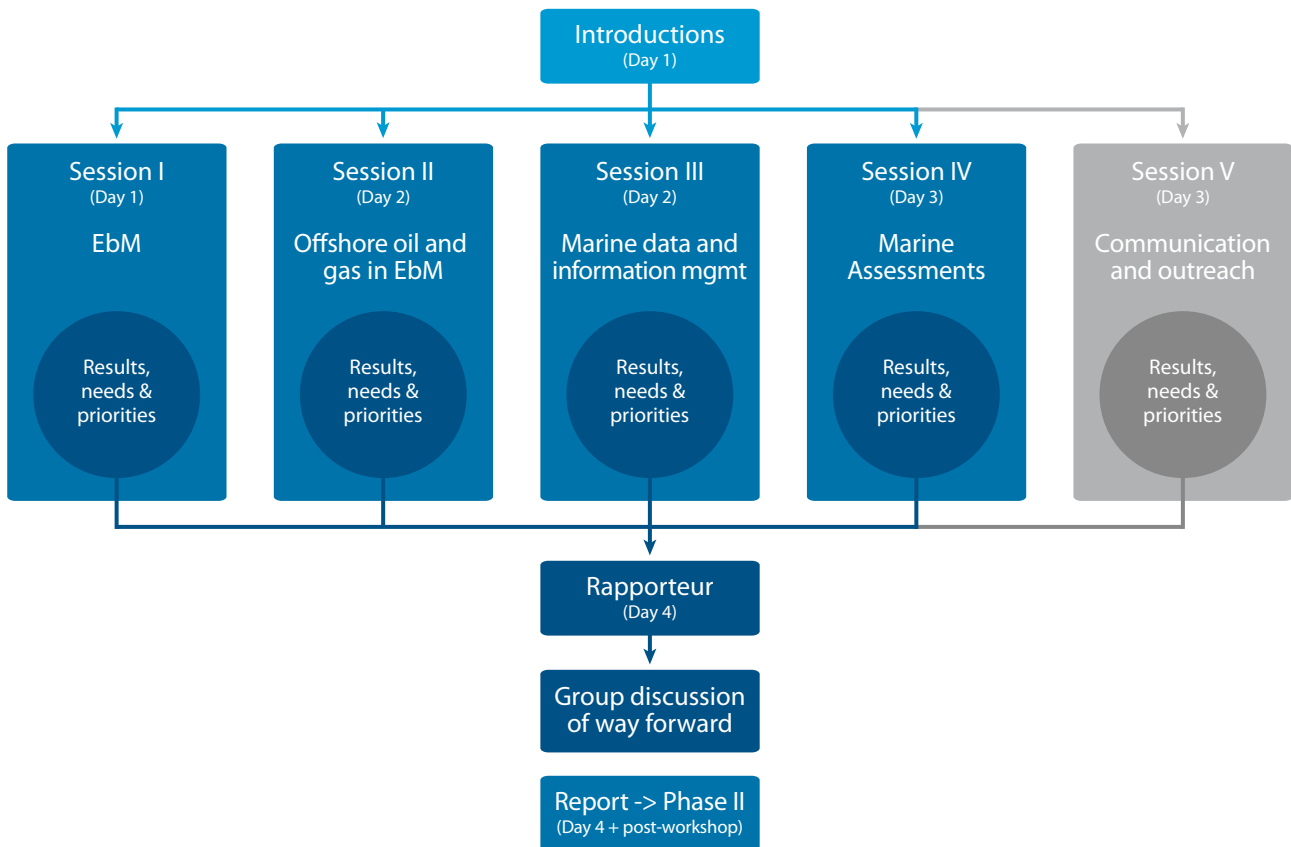


Figure 4. Workshop structure. Session 5 was not organized since the theme 'Communication and Outreach' was dealt with extensively in Session 1–4.

Organization

The Abidjan Convention Sustainable Seas Pilot workshop was organized in Grand-Bassam, Côte d'Ivoire from 18-21 June 2012 by the Abidjan Convention Secretariat and UNEP/GRID-Arendal, with participation of the Institute of Marine Research (IMR, Norway), WWF and ODINAFRICA (IOC of UNESCO). The preparation and organization of the workshop was made possible through financial and technical support from the United Nations Environment Programme and UNEP/GRID-Arendal.

Participants

The workshop was attended by government officials of member states of the Abidjan Convention. The participants all hold a senior position in marine and coastal zone management. As such, they were able to provide information on national coastal and marine issues, management and stakeholders at the

national level. They are also able to organize a network at the national level.

The meeting was chaired by Abou Bamba (Regional Coordinator, Abidjan Convention) and facilitated by Wouter Rommens (UNEP/GRID-Arendal). The list of participants is added in Annex I.

In total the workshop was attended by 26 participants: 17 representatives from the region, 3 representatives from UNEP/GRID-Arendal, 3 from partner organizations (IMR, WWF, ODINAFRICA) and 3 from the Abidjan Convention Secretariat. The following member states of the Abidjan Convention were represented: Angola, Benin, Cameroon, Congo, Côte d'Ivoire, DR Congo, Gabon, The Gambia, Guinea, Guinea Bissau, Guinea Equatorial, Liberia, Mauritania, Nigeria, Sao Tomé & Príncipe, Senegal and Sierra Leone.

Opening of the meeting

Abou Bamba welcomed the participants to the meeting. In his opening remarks he highlighted the cooperation between UNEP/GRID-Arendal and the Abidjan Convention Secretariat, which was initiated at the COP9 meeting (March 2011, Accra-Ghana). He explained the elements of cooperation which were formalized through an MOU between both organizations. One of the elements of cooperation is capacity building for sustainable management of the marine environment through the Sustainable Seas programme of UNEP/GRID-Arendal, which is initiated through this workshop.

Morten Sorensen (UNEP/GRID-Arendal) presented the activities of UNEP/GRID-Arendal. The UNEP Shelf Programme is coordinated by UNEP/GRID-Arendal in Norway and was established to assist developing States and Small Island Developing States (SIDS) to complete the activities required to delineate the outer limits of their continental shelf. The UNEP Shelf programme has been actively engaged with over 60 States worldwide through awareness raising and training, in addition to providing support in identifying, collecting or analyzing existing data.

Wouter Rommens (UNEP/GRID-Arendal) gave an overview of the Sustainable Seas programme, its pilot

implementation and the workshop approach. The Sustainable Seas programme is aimed to assist developing states in the growth towards Ecosystem-based Management of the Marine environment through specialized training activities, tools and processes. This workshop is aimed to identify related capacity building needs and identification of 'building blocks' for a consistent programme in the region.

Bjørn Serigstad (IMR) provided an introduction on the West-African activities of the Center for Development Cooperation in Fisheries (CDCF) of the Institute of Marine Research. The EAF-Nansen project "Strengthening the knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries" in West-Africa is focusing since 2007 on developing an ecosystem approach to fisheries in the region. Recently the focus has broadened towards ecosystems, biodiversity, ocean acidification, pollution and climate change effects.

Paul Siegel (WWF) gave an introduction on the activities of WWF in West-Africa. Mr Angora Aman (ODINAFRICA, IOC of UNESCO) provided an overview of the activities of ODINAFRICA in the region through its network of National Oceanographic Data Centres (NODC).

Session I

The Ecosystem-based Management framework

Introduction

Christian Neumann (UNEP/GRID-Arendal) gave an introduction on the concept of Ecosystem-based Management (EbM). EbM has gained growing international acceptance at the policy level, and the scientific level. EbM has been included in several national and multinational management strategies and plans, but few countries have developed detailed holistic multidisciplinary plans for entire ecoregions. Implementation of EbM in the Abidjan Convention Region was one of the recommendations of the Joint IMO/OSPAR/Abidjan Convention Workshop¹ (June 2011). Wouter Rommens provided a summary of the outcomes of the pre-workshop survey on Integrated Marine Management Initiatives in the region. A detailed overview is provided in Annex IV. Several integrated marine projects and initiatives were listed by the participants. In most cases these represent pilot projects and are not integrated into an overall national, cross-sectoral Ecosystem-based Management framework. Intra-regional differences were observed as well, ranging from states with good coverage of integrated marine and coastal zone management projects to states where implementation is still limited.

1. Joint Regional Workshop of the Abidjan Convention, IMO (London Convention and Protocol), and OSPAR Commission. Regional Training workshop on the Protection of Marine and Coastal Environment and the Fight Against Oil Spills in Africa - Workshop for Contracting Parties of the Abidjan Convention, Libreville, Gabon: 6-10 June 2011.

Coastal erosion, habitat degradation by various factors and pollution in general (oil, land-based sources, etc.) are listed among the most important issues in the region.

Four categories of challenges for EbM implementation were identified (Fig. 7): resources for implementation of EbM, government capacity and awareness on EbM, lack of a legal framework and enforcement, and external challenges such as climate change.

Outcomes of the working groups

The two working groups discussed the following questions:

- How well is the concept of EbM known and accepted among policy makers and decision makers?
- What are the challenges, in general, to initiate implementation of EbM in the region?
- What activities could be undertaken to address these issues?

Group 1 (francophone)

Group 1 concluded that, in general, the concept of EbM is better known among ministries and certain stakeholders directly dealing with marine environmental management in the region: e.g. Ministries of environment, Ministries of Fisheries, research institutions. Knowledge of the concept is limited or not existing among other, more economically oriented stake-

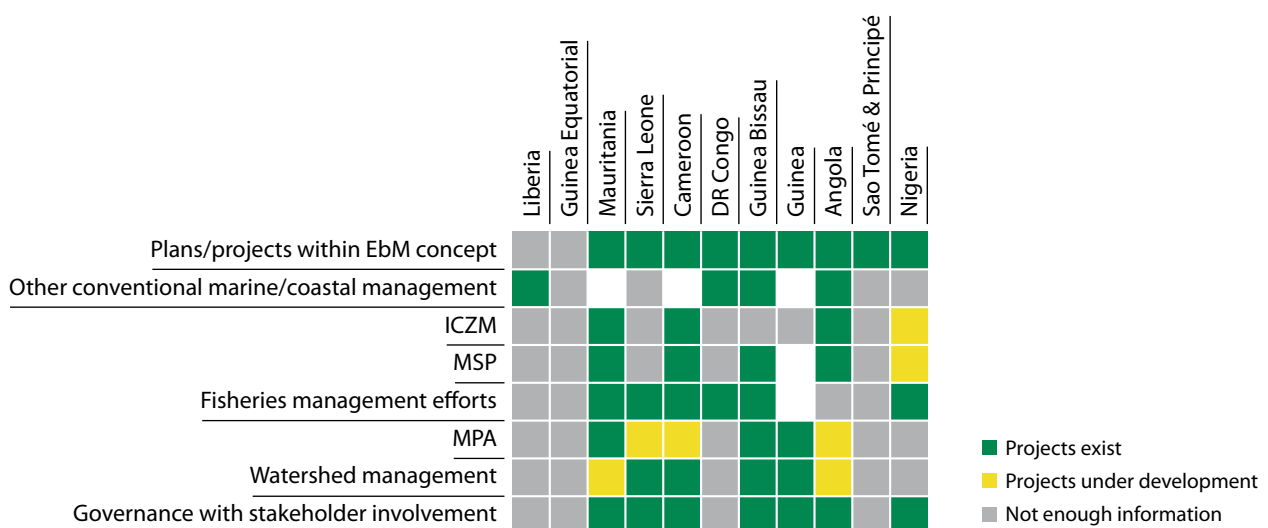


Figure 5. Presence of Integrated marine and/or coastal management projects in the region, at the national level, based upon the outcomes of the survey.

holders and ministries in the region. Lack of awareness on EbM is thus representing an impediment for EbM to be accepted and implemented as a mainstream concept for marine management at the national level. Other challenges are difficult interagency cooperation and coordination at the national level, and financial constraints to initiate implementation of EbM.

Challenges for implementation of EbM include:

- Generating an understanding of the concept among policy and decision makers.
- Awareness raising and training on the concept among stakeholders and politicians
- Awareness raising on the concept at the national, sub-regional and regional level

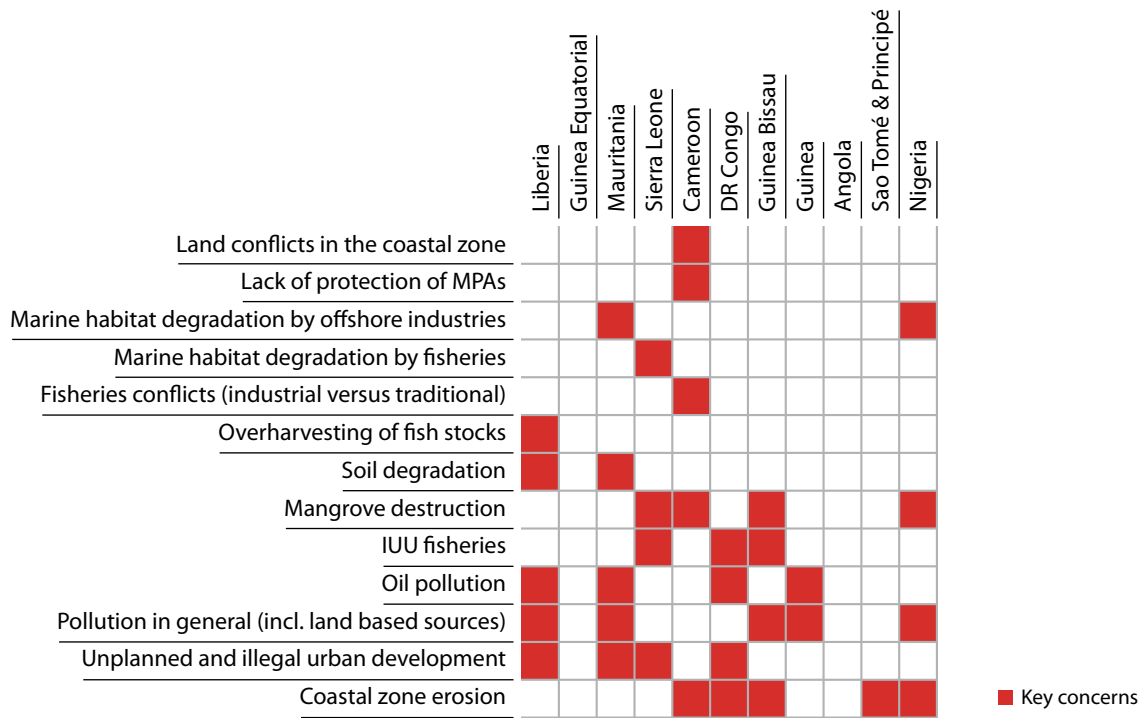


Figure 6. Key concerns and pressures on the marine and coastal environment in the region, based upon information provided in the survey.

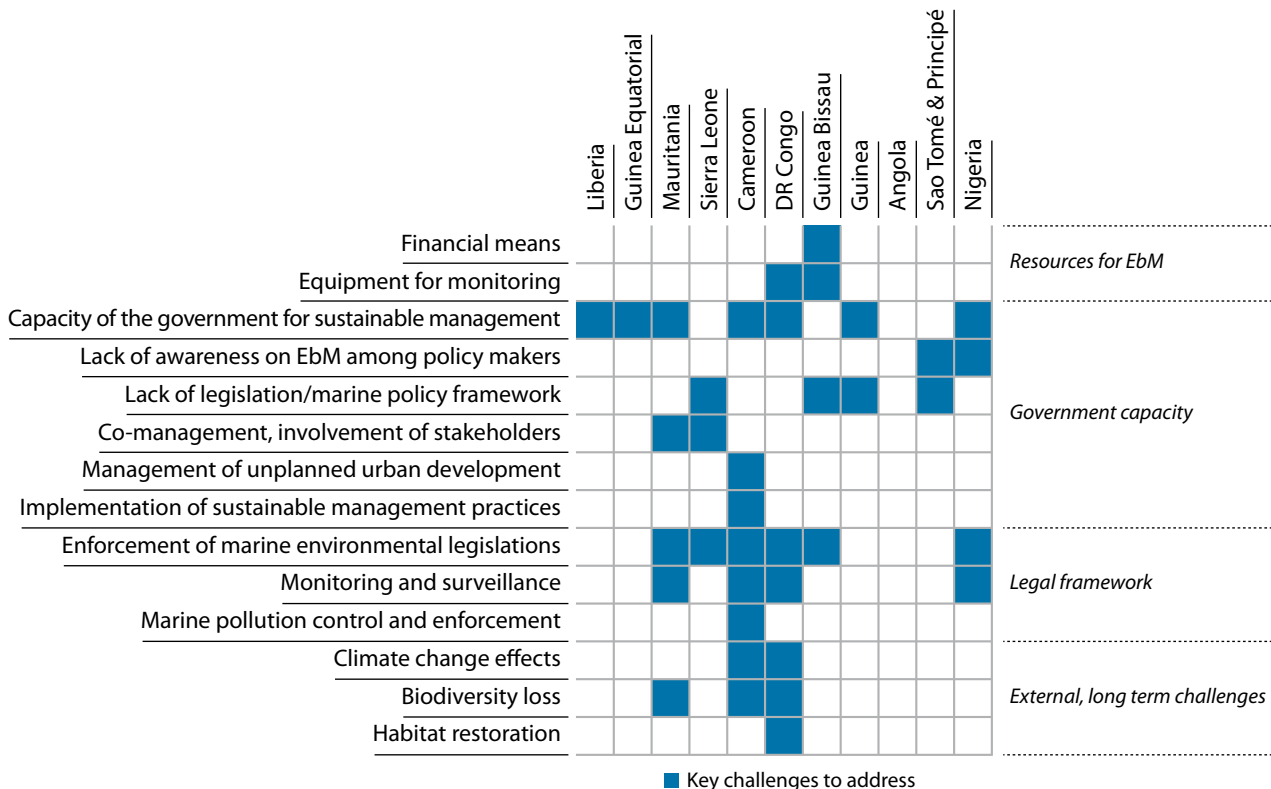


Figure 7. Key challenges for implementation of Ecosystem-based Management based upon information provided in the survey.



Oil rig in front of the Ivorian coast at Grand-Bassam. The expansion of the offshore oil and gas industry along the West-african coasts increases the risk of oil spills, with a potential threat for marine and coastal ecosystems and associated ecosystem services (e.g. coastal tourism). Photo: Wouter Rommens.

- Harmonization of the legal and institutional framework
- Harmonization of the methodologies and approaches on the sub-regional and regional level via the Abidjan Convention.

Activities to address these issues (and prioritization)

- Organization of national EbM awareness raising workshops for policy and decision makers (short term priority) and specialized conferences.
- Development of national strategies for EbM (mid-term).
- Development of modules on EbM in primary, secondary and university curricula (long-term)
- Promotion of research on EbM via scholarships
- Development of pilot projects to demonstrate EbM

S/N	Challenges	Activities	Priority rating
1.	Lack of awareness among policy and decision makers	<ul style="list-style-type: none"> • Awareness raising workshop among politicians and decision makers • Awareness raising at all levels (including education, communities, stakeholders) 	Short term Mid/long term
2.	Difficulties in interagency collaboration and cooperation	<ul style="list-style-type: none"> • Initiating Joint programmes among the agencies • Establishment of interministerial dialogues through interministerial Committees • Establishment of Environmental Committees 	Short/mid term Short/mid term Short/mid term
3.	Financial constraints	<ul style="list-style-type: none"> • Fundraising • Awareness on budget sharing among relevant government departments for common projects and programs 	Short/long term Long term

Table 1. Summary table group 2. Activities and prioritization to address challenges.



Coastal erosion is an issue along the Gulf of Guinea. Beach at Grand-Bassam (Côte d'Ivoire). Photo: Wouter Rommens.

Group 2 (anglophone)

In general, EbM is fairly known especially in the fisheries sector. In Gambia and Sierra Leone, the concept of EbM is, in general, more known in the fisheries sector than in other sectors, and more known among technical officers than decision makers. In Liberia there is a general lack of awareness of environmental issues, including EbM. The concept is well known among communities in Angola, but application and enforcement are problematic. In Nigeria the concept is generally well known and implemented (although still in its infancy). Nigeria participates in LME projects, fisheries programs and projects and implements EIA laws in the environment and fisheries sectors.

Challenges include awareness raising on the concept and the setting up on structures. In some cases the involved agencies do not want to relinquish power or mandates. In Sierra Leone there is a lack of adequate policies and implementation. E.g. restrictions on beach sand mining without alternatives. The Fisheries act is vague on the management side and procedural aspects. In Liberia and Nigeria there is a lack of financial support in government ministries due to budgetary constraints and limitations.

Another challenge includes:

- Interagency cooperation for information sharing

and collaboration due to fear of encroaching on agency mandates.

- Interagency coordination caused by organizational and personnel changes, lack of reporting back
- Sharing of information at the institutional level and use of the information
- Lack of a relevant data/information base

Recommendations

- National level: awareness raising workshop on EbM for policy and decision makers at the highest political level (interministerial). These could initiate joint inter-ministerial committees on marine management with joint programs
- Specialized communication products on EbM in support of the awareness raising workshops. These products (brochures, reports, ...) have to be adapted to the target audience (politicians and decision makers) and should contain relevant maps and figures on the marine environment (including socio-economic aspects) These products should focus on the advantages of EbM for socio-economic development.
- Mid/long-term: integration of modules on EbM in specialized university curricula on marine management

Session II

Involvement of the offshore oil and gas sector in EbM

Introduction

Mr Paul Siegel from WWF-West-Africa provided an introduction on how an Ecosystem-based Approach to marine management aims to achieve the best overall outcome for society in the long term. The offshore oil and gas industry is becoming an important driver for economic development in the region, with positive outcomes such as revenues for urgent social and industrial priorities, energy for development and economic diversification, and opportunities for long term investments. Negative aspects include impacts on fisheries, public health, security, economic distortions and impacts on tourism. He stressed that the offshore oil and gas sector is a cross-cutting sector requiring cross-cutting management.

A recent multi-stakeholder initiative in Sierra Leone is aimed to involve stakeholders in strategic decisions in offshore oil and gas management and consists of a presidential committee on Strategic Environmental Assessments (the Sierra Leone SEA Steering Com-

mittee). This is a model that could be used in other countries in the region as well. He also explained the importance of illustrative maps to raise awareness (e.g. oil spill trajectories) among politicians. The Abidjan Convention could play an important role to integrate the offshore oil and gas sector and management in Ecosystem-based Management, considering its relationship towards influential ministers, the existing agreements and protocols, its growing membership and influence and link to external partners and LMEs. He suggested the following actions for consideration by the Abidjan Convention group: outreach towards national ministers, other regional organizations (AMCEN, ECOWAS, SADC, UEMOA), the drafting of an offshore oil protocol on standards for environmental management, the support of regional dialogue and an information campaign on EbM as an essential tool for sustainable Green Economy, adoption of EbM by LMEs, the mobilization of external partners (OSPAR, IMO, ...). The 11th European Development Fund could be considered as a potential source of funding.

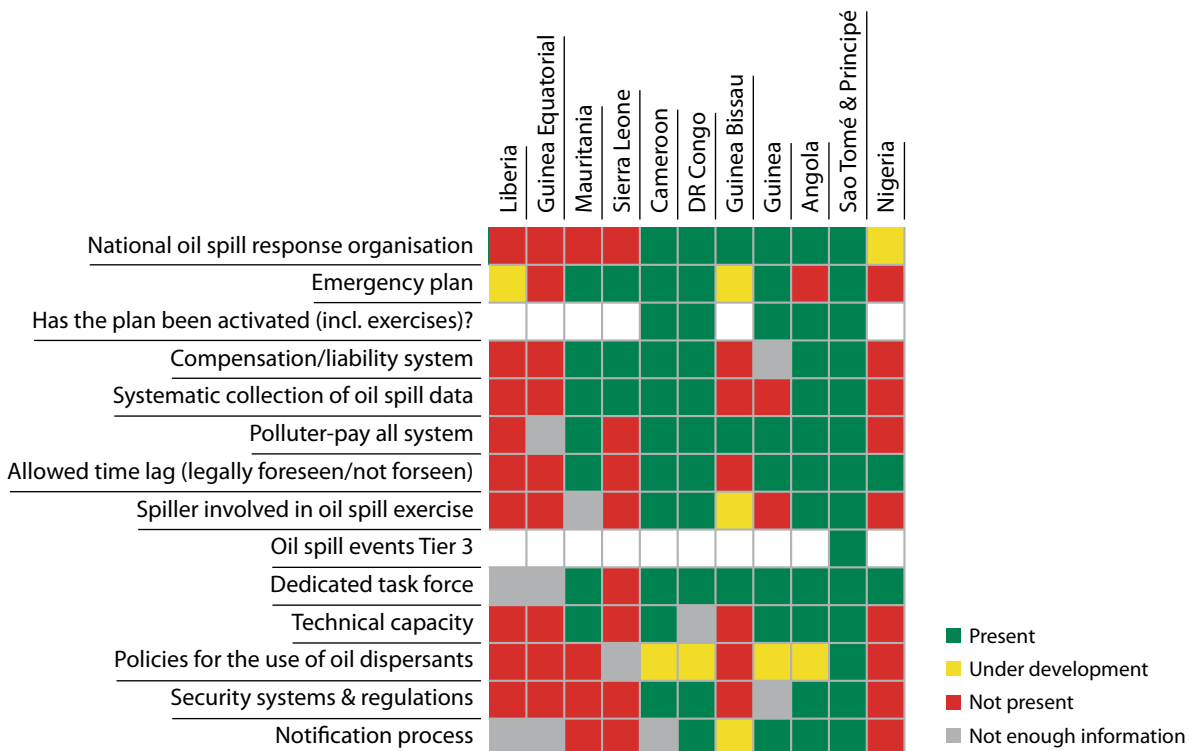


Figure 8. Presence of initiatives and capacity in the region in case of oil spills, based upon the outcomes of the survey.

Mr Wouter Rommens provided a summary of the outcomes of the pre-workshop survey on offshore oil and gas environmental management in the region. The aim of the survey was to assess the preparedness of the individual states in case of oil pollution. Surveys were received from 11 countries. Fig.7. provides an overview.

Outcomes of the working groups

The two working groups discussed the following questions:

- How can an improved regional cooperation and involvement between the oil and gas sector and the Abidjan Convention be achieved? What initiatives could be undertaken to improve integration of management of the offshore oil and gas sector in EbM ?
- What communication products could lead to an improved awareness and understanding?
- What information products would be beneficial to be shared on the level of the Abidjan Convention and would increase transparency? E.g. sensitivity maps, oil infrastructure maps, sharing information on oil incidents, sharing information on national regulations.
- Initiation of a process of standardization of environmental standards across the region.

The groups concluded that as a first step, there is a need to identify structures and stakeholders involved in the management of the offshore oil and gas sector, at the national and regional level.

Secondly, there is a need for awareness raising activities on EbM and offshore oil and gas among the identified stakeholders via workshops (short- and mid-term). These awareness raising workshops on offshore oil and gas development and EbM should be organized at the national level in the short and mid-term, which could lead to national communication platforms with the industries, managing agencies and local communities. The task of these platforms should be to reflect on offshore oil and gas development and orientate the development of the petroleum sector. A successful example of such a communication platform exists in Sierra Leone.

The groups also identified the need for technical capacity building and support with equipment for monitoring of the petroleum sector.

Specialized communication and outreach products

- The development of products should be based upon a communication plan with products adapted to the target audience.
- The message should be adapted to the target audience (policy and decision makers, the industry,

communities). An example: upon communicating with the Ministry of Economy on integration of offshore oil and gas management into a broader EbM framework, one should include financial elements in the message.

- Relevant products and activities include: information sheets, posters, conferences, discussion meetings, educational modules (high school, university), and documentaries.
- Press releases and communication products for journalists

Relevant information products include maps with sensitive habitats, transboundary ecosystems, fisheries data, remote sensing oil spill data, relevant oceanographic data (e.g. currents). There is a need for an associated web platform to share this data and information at the level of the Abidjan Convention.

The development of regional environmental standards is seen as the responsibility of the Abidjan Convention. International organizations dealing with these issues should be contacted by the Abidjan Convention in order to assist. The development of minimum standards for environmental baseline monitoring and development of regional environmental sampling methodologies for offshore oil and gas environmental monitoring are seen as a priority. OSPAR and other organizations could provide guidance on this subject.

Recommendations

- Identification of structures and stakeholders involved in the management of the offshore oil and gas sector, at the national and regional level and awareness raising workshops among the stakeholders (short/mid- term).
- Development of a communication platform at the national level to reflect on national offshore oil and gas development and orientation of the development of the petroleum sector (short/mid- term).
- Development of relevant information products (maps with sensitive habitats, transboundary ecosystems, fisheries data, remote sensing oil spill data, relevant oceanographic data on currents etc.) and development of an Abidjan Convention web platform to share relevant information products among (short/mid-term).
- Development of common regional environmental standards for the Abidjan Convention in cooperation with OSPAR, IMO and other international organizations (short/mid-term).

Session III

Marine data and Information Management in EbM

Introduction

Wouter Rommens provided an introduction on the importance of marine data and information management in Ecosystem-based Management. The sharing of data and information is an essential component of the Abidjan Convention Protocol (Article 14, §1, §3) and Contracting Parties are asked to share data and information for the purpose of the Convention and its related products. Marine management (and Ecosystem-based management in particular) require understanding on the marine environment (including the physico-chemical and biological components) and socio-economic, as well as cultural factors playing a role in the management. Essential biological data in EbM include e.g. threatened and endemic species, economically and culturally important species, protected species, critical habitats, highly productive habitats, migration corridors, commercial and traditional fishing grounds, marine protected areas. Essential physico-chemical data in EbM include e.g. chemical parameters, physical parameters, currents, pollution data, and temperature salinity. A pilot State of the Marine Environment web portal is currently under development and is based upon the concept of the One-Stop-Data-Shop (OSDS), developed under the UNEP Shelf Programme. This web portal will provide basic marine environmental and socio-economic data layers useful for marine management in developing states.

Angora Aman (Cocody University, Abidjan & ODINAFRICA) provided an introduction on the activities of ODINAFRICA through its network of National Oceanographic Data Centers (NODCs). The initial focus of this network was to enable member states to get access to data available in other data centers, to develop skills for processing of data, develop infrastructure for archiving, analysis and dissemination of marine data products. Capacity building activities (training) on data and information management was provided to enable member states to address the key issues such as coastal erosion, management of key ecosystems and habitats, management of living resources, pollution and tourism. Sources for marine information developed by ODINAFRICA include Oceandocs, Afrilib, African Ocean Portal and OceanExpert. Sea level monitoring stations (GLOSS) have been installed in the region in Sao Tomé, Nigeria, Côte d'Ivoire, Ghana, Guinea, Congo and Cameroon. In the fourth

phase (2009-2013) of ODINAFRICA the activities are focused on the development of national portals and websites, communication tools, information services, the African Marine Atlas (at national level) and the development of data services, including catalogues and archives. Although ODINAFRICA has significantly improved access to data and information, the data from many regional at global marine related projects and programs that have been implemented in Africa over the years, remain virtually inaccessible to marine scientists and resources managers. There are several factors: complex data use agreements, reluctance to share data without financial compensation and the fact that data not are digitized, wide variety of data formats. In some cases, projects and programs that generated valuable datasets did not have a good institutional home, leading to data being lost when program funding ends.

Bjørn Serigstad provided an introduction on the NANSIS data system, developed by IMR with support of FAO and NORAD. The NANSIS system is an integrated survey data collection, quality control, storage, post processing and retrieval system developed in the framework of the EAF Nansen programme. The NANSIS system is a compact, file independent system for use on local research vessels, vessels of opportunity and in research institutions. It is able to store and collect data precisely, safely and with performance and is easy to use, install and maintain. The NANSIS metadata web portal is a tool to get an overview on the web on available surveys in the NANSIS survey directory. It shows survey track and typical stations from the surveys. The system allows export of survey metadata. In future, export of free access data is foreseen. Other developments will include the enhanced support for queries based of fish catch data and environmental data and support for storage of other station data.

Outcomes of the working groups

The two working groups discussed the following questions:

- Availability of marine environmental and socio-economic data and information in the region: Where are the data at the national level? Physico-chemical, biological and socio-economic data? Are the data accessible? Improving the sharing and

availability of data for marine assessments

- What are the data gaps in biological, physico-chemical and socio-economic data about the marine environment?
- Is there enough capacity in the region to obtain data from global, regional local sources and analyse the data in the framework of e.g. National State of the Marine Environment reporting?

The groups concluded that marine data is available but dispersed in research centers, universities, ministries and national bureaus of statistics. Regionally the Large marine Ecosystems (LMEs), Canary Current (CCLME), Guinea Current (GCLME) and Benguela Current (BCLME) are a source of information. The accessibility depends on the nature of the data, with some data being confidential. Socio-economic data are in general fairly easy to obtain at the National Bureaus of Statistics (although data on some subjects is limited). In general data access can be categorized in:

- Open access data: can be obtained free of charge at the data holding institutions.
- Data requiring official approval.
- Data for which a consultation fee is required.

In general there is a need in the region to improve the different aspects of marine data and information management through capacity building: data acquisition, data management, data conversion and transfer into a useable format and data archiving.

Data issues and gaps:

- Data calibration and formatting.
- Data loss (because data is kept by the scientists and eventually lost).
- Lack of time series of sufficient quality.
- Lack of funding for data collection.
- Lack of qualified and specialized personnel to deal with data management.
- Although data and information is available, the decision making level does not make use of it.
- Funding for data collection is ad hoc (project-based).

In general there are insufficient tools and equipment available for data collection. There is a need for capacity building (including north-south and south-south exchange of expertise). Other organizations such as ODINAFRICA and GI WACAF may be able to help on the capacity building side.

Recommendations

- Development of National Environmental Data Centers, responsible for collection and management of marine environmental and socio-economic data and information for marine management purposes (mid/long term).
- Capacity building activities on data management (mid-term).

Session IV

Marine assessments

Introduction

Wouter Rommens provided an introduction to marine assessments in general and the status of marine assessments in the region in particular. Marine assessments are defined as scientific evaluations of an aspect of the marine ecosystem, environment, group of organisms or associated processes. Marine assessments are an essential element in Ecosystem-based Management because they provide relevant, credible and useful information on environmental issues to policy- and decision makers and the public in general. They are also aimed to increase awareness on environmental issues among decision-makers and the public and support evidence-based environmental management decisions leading to more sustainable use and effective conservation of marine environmental resources. Marine assessment may also include socio-economic evaluations. Different types include "sectorial or integrated", broad or narrow" and "national, regional or local" assessments. A common approach for marine assessments is the so called DPSIR methodology (Driving forces-Pressures-State-Impact-Response) which is used in a slightly modified way in the OSPAR Quality Status Report 2010. The GRAMED database contains an overview of marine assessments in the region of the Abidjan Convention. The number of national marine assessments is rather limited (9). The reports produced by the member states of the Abidjan Convention are characterized by non-uniform formats and methodologies. There is therefore a need for development of a common format and methodology. UNEP/GRID-Arendal has an extensive expertise with guidance and capacity building for environmental reporting. Recent examples include the State of the Environment of South Africa (including a web portal), the State of the Mediterranean Marine and Coastal Environment (UNEP/MAP), the Caspian Sea State of the Environment, The Africa Environment Outlook.

Bjørn Serigstad provided an introduction to MAREANO (Marine Areal Database for Norwegian sea areas). MAREANO includes an assessment of cumulative environmental effects and forms the basis for the marine management plans for each of the three Norwegian seas. An Integrated Management plan for the Barents sea and Lofoten Islands has been developed and is aimed towards a sustainable use of

natural resources and safeguarding of the environment. The plan takes into consideration the value of the area for fisheries and seabirds in the management of risks of acute oil pollution from sea transport. Data and information on particularly valuable and vulnerable areas are essential in this process. The MAREANO contains detailed bathymetric maps, fine-scaled information about sediment types, habitats, and geological features, distribution of benthic fauna, biodiversity, communities, and production, environmental status of sediments and an area database for Norwegian coastal- and offshore areas.

Outcomes of the working groups

The two working groups discussed the following questions:

- Status of national marine assessments - Is there a regular cycle of assessing the State of the Marine Environment in member states of the Abidjan Convention? What are the challenges? Capacity building needs in the short and long term?
- What are the most important environmental aspects to be studied in this region?
- How can we analyse the socio-economic benefits of the marine environment in the region of the Abidjan Convention? Is there enough information? Who collects this information?
- How can social aspects (health, income and general well-being of marine workers, etc.), and the social impacts of the marine environment on society in general be analysed in the region?
- Capacity development: what tools, products or processes could support the development of national marine assessments? e.g. reporting sheets, marine indicators, environmental portals

The groups identified pollution, coastal erosion, fisheries management, loss of biodiversity and climate change among the most important challenges in the region.

The working groups concluded that in general there is no regular production of integrated marine assessments at the national levels. In some cases specialized sectorial assessments (e.g. fisheries) are produced on a regular basis. There are examples of regular marine assessment studies at the regional level (e.g. LMEs and marine environmental projects).

Challenges that are currently hindering a regular assessment process at the national levels include:

- Lack of finances.
- Lack of experience with integrated marine assessment studies among staff.
- Lack of interest among politicians due to limited knowledge and awareness on the subject.
- In some cases there are conflicts between government institutions over the mandate to develop national marine assessments. The lack of a coherent policy framework is seen as an additional issue.

Socio-economic analyses for integrated marine assessments might be difficult to achieve due to data that are only partially available and often difficult to access for various reasons. Socio-economic data are collected by technical services of the different socio-economic sectors.

Social aspects of the marine environment are a scientific domain that remains largely unexplored and more research is needed on this subject. Analyses of social aspects of the marine environment are therefore currently largely lacking and remain anecdotic.

In the short term there is need for a common methodology and reporting template for the Abidjan Convention Focal Points to report on the State of the Marine environment towards the Abidjan Convention. In the short- and mid-term National Marine Environmental Data Centers could be developed to underpin the process of marine assessments in the region. These National Marine Environmental Data Centers have the task to assemble relevant biological, physico-chemical, social and socio-economic data and information for the cyclic production of marine assessment studies, in support of Ecosystem-based

Management in the region. Additional roles of such centers might include:

- National action platforms for the development of marine assessments.
- Communication and outreach to stakeholders

Capacity building workshops are needed to develop these centers common methodologies for the development of marine assessments. The development of a knowledge base with existing environmental reports and publications on the State of the Marine Environment in the region is seen as an essential tool to support this process. In order to improve monitoring of the marine environment there is a need for technical support to laboratories for monitoring. In the long term modules on marine assessments and monitoring should be included in the curricula of specialized master degrees on marine management in the region.

Recommendations

- Development of a reporting template to allow Abidjan Convention Focal Points to report in a standardized way towards the Abidjan Convention (short term).
- Support of the Abidjan Convention Focal Points towards the organization of marine assessment development and communication platforms at the national level. These platforms could be embedded within the National Environmental Data Centers (mid term).
- Regional capacity development activities to develop a common methodology on marine assessments (mid/long term).

Way forward

Short term (0-12 months)

Development of reporting template

In the short term there is a need to develop a common reporting template to be used by the Abidjan Convention Focal Points to report on the status of the marine environment towards the Abidjan Convention. This template should be developed to be presented and adopted at the COP meeting in Pointe Noire (Republic Congo).

Capacity development for national marine assessments

In the short term there is SIDA funding available at the Abidjan Convention Secretariat to organize capacity building activities on the development of national state of the marine environment reports for a limited group of Abidjan Convention member states. This will be organized through a consultancy project.

Mid- and long term (1-5 years)

The recommendations under 4.3, 5.3., 6.3. and 7.3. represent 'building blocks' for a regional-scale programme on Ecosystem-based Management in the region of the Abidjan Convention. The programme and its activities will be based upon the EbM cycle. A programme proposal will be elaborated and presented for adoption at the COP10 meeting in Pointe Noire (Republic of Congo) in November.

Key activities and tools include:

- Organizational activities: awareness raising workshops for policy and decision makers, development of national networks and platforms.
- Technical activities: technical workshops on monitoring, data and information management, marine assessments and specialized workshops (e.g. EBSA).
- Communication and outreach: communication activities towards stakeholders supported by communication products
- Supporting tools: Abidjan Convention marine environmental data and information portal

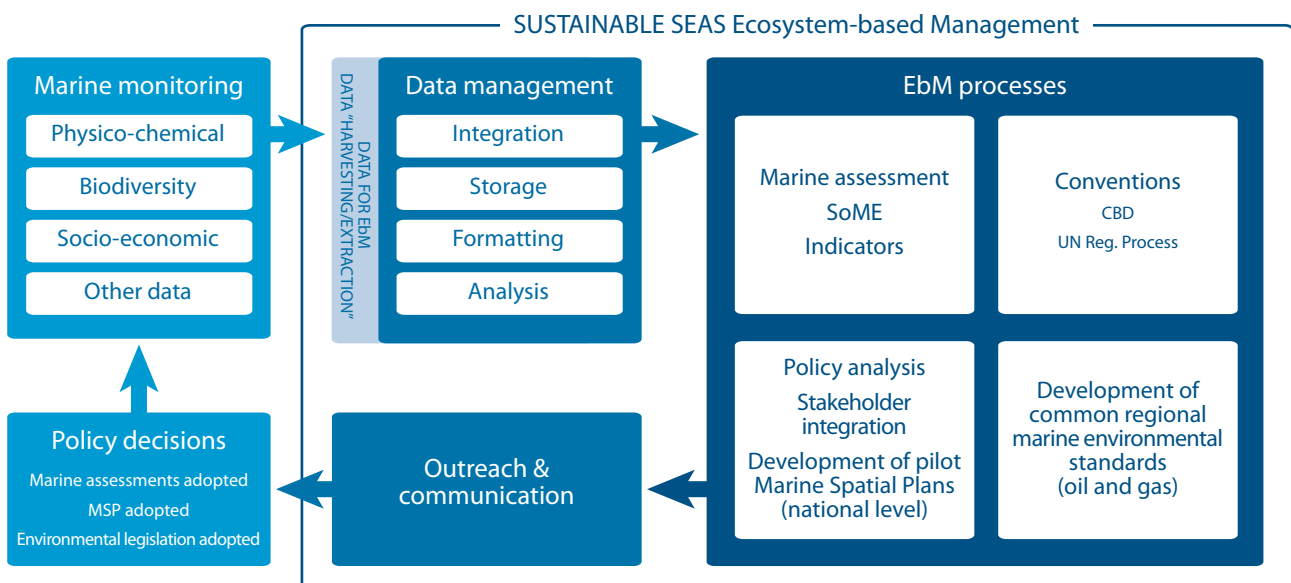


Figure 9. Representation of the EbM cycle as a basis for the development of the Sustainable Seas programme.

Annexes

Annex I: List of participants

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Annex II: Agenda

Day 1 (18 June 2012)

10:00-12:30	Practicalities (arrival and registration)	UNEP
	Welcome	UNEP
	Workshop objectives within the framework of the Abidjan Convention	UNEP
	GRID-Arendal and the UNEP Shelf Programme	G-A
	Sustainable Seas, workshop approach and expected outcomes	G-A
	Institute of Marine Research, Norway Centre for Development Cooperation in Fisheries (CDCF)	IMR
	WWF West-Africa	WWF
	ODINAFRICA introduction	ODINAFRICA
	Round table introduction of participants	All
	Workshop approach sessions	G-A

12:30-14:00 *Lunch*

13:30-17:00 **Session I: Framework: EbM** **G-A/UNEP/WWF**

	Identification of rapporteurs	
	Introduction to EbM: breadth of the concept and what it entails.	G-A
	Detailed outcomes of the survey	G-A
	Discussion round: are there currently examples of EbM and related concepts being implemented in the region? Any pilot projects? What are the challenges and opportunities for implementation of EbM in the region?	Discussion Groups (2)
	Plenary: summary of the discussions in the Working Groups	Plenary

Day 2 (19 June 2012)

9:00-12:30 **Session II: Involvement of the offshore oil and gas sector in EbM**

	Identification of rapporteurs	
	Maximizing Benefits:Ecosystem Based Management and Offshore Oil and Gas	WWF
	Detailed outcomes of the survey, including outcomes of last year's workshop	G-A
	Ecosystem Monitoring: Effect studies and environmental baseline Examples from cooperation projects in West Africa	IMR
	Round-table with participants: what are the current challenges for the governments in the region to address oil and gas environmental management issues? How can communication be improved between marine sectors and offshore oil and gas? How can the offshore industry be involved in EbM?	Discussion groups (2)
	Plenary: summary of the discussions in the Working Groups	Plenary

12:30-14:00 *Lunch*

13:30-17:00 **Session III: The role of marine data and information in EbM** **G-A/IMR**

	Identification of rapporteur	
	Introduction to marine data and information & advantage of data sharing, applied data and information products in support of EbM for the Abidjan Convention: Data gaps/tools/platforms	G-A

Nansis - Nansen Survey Information System Marine fisheries and environmental data from the Nansen Program	IMR
ODINAFRICA: network and activities in the region, possibilities for synergies	ODINAFRICA
Availability of marine data in the region: where is the data? What data are needed? How can access to data be improved?	Discussion groups (2)
Plenary: summary of the discussions in the Working Groups	Plenary

Day 3 (20 June 2012)

9:00-12:30	Session IV: Marine assessments and reporting	G-A
	Identification of rapporteur	G-A
	Introduction to marine assessments and reporting: role of marine assessments in EbM and related processes	G-A
	Scientific Basis for a Marine Management Plan Experience from the MAREANO PROGRAM	IMR
	Capacity development for marine assessments: intro, relationship with UN Regular Process, how G-A and partners can assist	
	Status of marine assessment capacity in the region, challenges and needs	Discussion groups (2)
<i>12:30-13:30</i>	<i>Lunch</i>	
13:30-17:00	Status of marine assessment capacity in the region, challenges and needs (continued)	Discussion groups (2)
	Plenary: summary of the discussions in the Working Groups	Plenary

Day 4 (21 June 2012)

9:00-12:30	Introduction on approach for project proposal drafting	G-A
	Outcomes of the themes: rapporteurs	Rapporteurs
	Working groups: drafting project proposal summaries, based upon the outcomes of the sessions	5 Working groups
<i>12:30-13:30</i>	<i>Lunch</i>	
13:30-15:00	Summary	Rapporteurs
	Way forward	UNEP/G-A/IMR
	Closure of workshop	UNEP

Annex III: Results of the survey among the member states of the Abidjan Convention

Introduction

A survey was organized by the Abidjan Convention and UNEP/GRID-Arendal (Norway) and the Institute of Marine Research (Norway) among member states of the Abidjan Convention in preparation of the Abidjan Convention Sustainable Seas pilot workshop (June 2012). The survey consisted of 3 parts: i. assess preparedness of the region in case of oil spills, ii. to make an inventory of integrated marine management initiatives at the national level and iii. to have an overview of most important marine stakeholders. This document contains a summary of the outcomes of the survey on integrated marine management initiatives. The summary is based upon the responses of the member states.

The survey was sent to the 14 member states that has ratified the Abidjan Convention. In total, 11 surveys were received from Angola, Cameroon, DR Congo, Guinea, Guinea Equatorial, Liberia, Mauritania, Nigeria, Sao Tomé & Príncipe, Sierra Leone and Nigeria.

The assessment of offshore oil and gas environmental management and preparedness in case of oil spills (part 1 of the survey)

The first part of the survey was aimed to assess the preparedness and capacity of the region in case of oil spills. This included questions relating to the preparedness in terms of policy and legal frameworks, as well as technical capacity to deal with oil pollution in the region.

Question 1: presence of a national oil spill response organization dedicated to rapid response to oil spills.

No dedicated oil spill response organization is active in Liberia, Guinea Equatorial, Mauritania or Sierra Leone. The "1994 Freetown oil spill contingency plan" made provision for a coordinating committee that would handle oil spill incidences, but is not active at the moment. Cameroon, DR Congo, Guinea Bissau and Guinea indicated that they have organizations that have the responsibility for rapid responses to oil spills. In the case of Guinea Bissau and Guinea Conakry these centers fall under the responsibility of the Ministry of Environment. Sao Tomé & Príncipe indicated that this organization is under development. In Angola the organization was initiated in 2008. In Nigeria there is a National Oil Spill Detection and Response Agency (NOSDRA).

Question 2: Is there an Emergency Plan in case of oil spills?

Angola, Liberia, Guinea Equatorial, Guinea Bissau, Sao Tomé & Príncipe indicated that currently no emergency plans have been developed. Guinea Bissau and Liberia indicated that such a plan is under development. Liberia will develop such a plan with assistance of GIWACAF and IMO. Cameroon, DR Congo, Guinea, Sierra Leone and Mauritania indicated that emergency plans are active. In the case of Sierra Leone the plan was developed in 1994. Mauritania has included the plan 'POLMAR' in the law related to the prevention and combat against marine pollution. In Nigeria there is a National Oil Spill Contingency Plan (NOSCP).

Question 3: How often is the Plan activated as an emergency preparedness response action in your country?

Since Liberia, Guinea Bissau and Sao Tomé & Príncipe do not have such a plan yet, it has not been activated yet. Sierra Leone indicated that such exercises were foreseen in the 1994 plan but it is currently inactive. Mauritania has not activated the plan yet. Cameroon mentioned that they hold regular oil spill response simulation exercises. Such exercises are also held regu-

larly (1-2 times a year) in DR Congo and Guinea. In Guinea there is also a regular meeting between the industry and the government on this subject. In Angola the plan is activated each time there is an incident. Angola holds simulation exercises once a year. In Nigeria the plan is activated periodically.

Question 4: Is there a compensation/liability system for oil companies if oil spills are caused?

Liberia, Guinea Equatorial, Guinea Bissau, Sao Tomé & Príncipe indicated that no such a system is present in their respective countries. In Cameroon the Framework law on the environment foresees sanctions in case of pollution in general (including oil spills). Cameroon also ratified the Convention MARPOL73 and the Convention for protection of the marine environment. In DR Congo there have been cases where local communities organized themselves to get compensation for oil pollution damage. Guinea indicated that there is a legal framework for compensation and liability for oil companies. The Oil spill contingency plan of Sierra Leone includes procedures to set claims for damage made to the marine environment in case of an oil spill. These damage claims are based on loss of e.g. touristic value worked out by the Ministry of Tourism and Cultural affairs and the National Tourist Board, Loss of maximum allowable catch of fisheries through the Ministry of Fisheries and Marine Resources, damage to infrastructure and equipment, materials and labor used in the cleaning process and claims for damages to other services. Mauritania has adopted the Conventions of 1992 that deal with this and the FIPOL. Angola has a compensation system. In Nigeria, the Clean Nigeria Associates (CNA) initiative deals with this (Oil Spill Cooperative).

Question 5: Is there data available on oil spills (events, severity, and geographical occurrence)?

In most of the countries there is no systematic collection of data on occurrences of oil spills. This is partly because in most cases major oil spills (tier three) have not been observed yet (e.g. in Liberia, Guinea Equatorial, Guinea Bissau, Guinea, Sao Tomé & Príncipe, Sierra Leone and Mauritania). Some data on the occurrence of minor oil spills are collected in Cameroon and DR Congo. Cameroon mentioned the occurrence of several tier one spills. DR Congo indicated that data are kept by the CCPM and CICG. Angola keeps a database of incidents but no further information is given. Nigeria indicates that very good and up-to-date data on this subject exist.

Question 6: Some countries operate a polluter-pay all system. What penalty system against polluters exists in your country?

No such polluter-pay system is foreseen in Liberia, Sierra Leone, Sao Tomé & Príncipe. Cameroon, DR Congo, Guinea Bissau, Guinea and Mauritania have foreseen this in the law. In DR Congo this has been included in the new environmental framework law. In Guinea Bissau this is incorporated in the general "Code de l'Environnement" and specifically in the "PNIU" (which is under development). In Angola the polluter is always responsible in the event of an oil spill and should indemnify the state and other private institutions. Such a system exists in Nigeria.

Question 7: What time lag is allowed before an oil spill is reported in your country?

Since in several countries no oil spill response plan is yet activated, there is not yet an allowed time lag foreseen in Liberia, Guinea Equatorial, Guinea Bissau, Sao Tomé & Príncipe and Sierra Leone. Cameroon mentioned that action should be taken immediately but this is not mentioned in the law. In DR Congo one hour is foreseen and actions are being taken to diminish the time lag. In Guinea tier 1 and 2 spills can be reported 6 to

12 months after the spill. Sao Tomé & Príncipe mentioned 48 hours in case of oil spills although this is not foreseen yet in the law. In Mauritania, immediate reaction is necessary. In Angola the polluter is obliged to report to the authorities within 8 hours after the incident. In Nigeria this has to be reported as soon as possible, within 24 hours.

Question 8: Is the Spiller involved in oil spill detection exercise?

Since an emergency plan or exercise is not yet active in several of the countries (Liberia, Guinea, Guinea Equatorial, Sao Tomé & Príncipe, Sierra Leone) spillers are not involved yet. Although the PNIU is not yet active in Guinea-Bissau, all relevant institutions and organizations are involved in the future plan. In Cameroon oil companies are involved in simulations and take part in the urgency plans. In DR Congo exercises are planned with involvement of the industry. Shell and Total have been involved in exercises in Guinea. In Angola there are joint exercises, mainly to test the system The Angolese government helps to get the necessary logistic and administrative support to import equipment and other resources. In Nigeria the spiller is involved for spills within the spillers operation/operational area.

Question 9: If an oil spill is observed (e.g. oil washed up on the shore), how is this development dealt with? Is there a task force dedicated to deal with the clean up? If not, who is responsible for the clean-up?

Liberia, Guinea Equatorial, Mauritania and Sierra Leone mention that major oil spills have not happened yet. In Guinea Bissau oil spills have not been observed yet. In case an oil spill event would happen the responsible agency for the cleanup is the "Direction Générale de l'Environnement". No special dedicated group exists yet. The existing oil spill contingency plan of Sierra Leone includes oil spill response teams comprising of representatives from all concerned sectors, but no record of functional activity of this committee is available. In Mauritania there is no structure yet. The Ministry of Environment is dealing with the coordination of the cleanup. In Cameroon three organizations are involved: the "ANC MINEPDED", the "Comité National Permanent d'Intervention aux déversements d'hydrocarbures" and the "Comité National de Gestion des incidents". In case of pollution of level 1 a task force is formed to clean the beaches. The national coordinator of the DR Congo and local authorities organize the clean up together with NGOs and volunteers. In Guinea there is a crisis management team (Comité de Gestion de Crise). The "Direction Nationale de l'Environnement" is responsible for the cleanup. In Sao Tomé & Príncipe the clean-up is done by the Coast Guard. Angola is currently training volunteers to assist if necessary. But the end responsibility in Angola is with the polluter who is always responsible for the cleanup. The polluter is supervised by the Angolese government to deal with the response, under our supervision. In Nigeria oil spills are reported to NOSDRA for immediate response.

Question 10: Technical capacity available to deal with oil spill

Most of the countries do not have specialized equipment, vessels or personnel to handle oil spills. This is the case for Liberia, Guinea Equatorial, Cameroon, Guinea Bissau, Sao Tomé & Príncipe and Sierra Leone. In other countries such as Cameroon there are qualified clean-up personnel available with the oil companies and refineries Société Nationale de Raffinage (SONARA). In case of oiled beaches in Cameroon the army is mobilized for the cleanup operation. This is foreseen in the disaster plan coordinated by the Ministry (Ministère de l'Administration Territoriale et de la Décentralisation). There are no ships available in Cameroon. In Guinea some personnel and equipment is available to deal with level 1-2 spills. The port of Conakry has 3 ships available to deal with oil pollution. Sierra Leone has little or no capacity in terms of technical personnel in the field of oil and gas environmental management and protection. One private company known as CLASS DIVING has some technical capacity to deal with oil spills and has assisted with some minor oil spills from ships. In Mauritania most of the equipment and capac-

ity is with the national navy. The police (gendarmérie) and the Ministry of Fisheries have additional equipment. The oil companies in Mauritania have floating dams available on the petroleum platforms. No exact figures are provided for Angola, but Angola indicates that there are plenty of technical capacities among the oil companies (staff, booms, skimmers, dispersants, vessels and helicopters). The Navy and the Civil Protection System of Angola have also capacity available. In Nigeria, there is the NOSDRA (Staff, Response equipment in general), Clean Nigeria Associates (CAN), staff, equipment, vessels and NIMASA (Staff, equipment, vessels).

Question 11: Handling of different oil spill tiers and occurrence

Liberia, Guinea Bissau, Guinea Equatorial, Sao Tomé & Príncipe and Mauritania indicate that oil spills have not occurred yet. In Cameroon handling of the oil spills at different levels is part of the national urgency plan. A tier three spill has never occurred. In the DR Congo, tier one spills are managed by the industry. Tier two spills occurred fairly frequent and the national action plan is activated in this case. In Guinea tier one and two oil spills are managed by the industry. Tier three spills have never occurred in Guinea and DR Congo. The situation in Angola: for Tier-one, the Polluter should handle the response by himself. For Tier-two, he can ask for help from another Operator and pay the costs. For Tier-three, all national resources are mobilized and if necessary to get help from abroad. The situation in Nigeria: Tier One spills are individual Oil company spills and several are reported. In Tier One cases the company is responsible for clean-up, usually 7 tonnes (50 bbls) and below. Tier two spills are caused by oil companies and are usually less frequent, 7 tonnes but less than 5000 bbls. In this case CNA has to be addressed. In case of Tier three spills, the National Contingency Plan is activated (spills over 700 tonnes/5000 bbls).

Question 12: Policies for the use of oil dispersants

In most countries there are currently no policies or regulations in place (Liberia, Guinea Bissau, Guinea Equatorial, Sao Tomé & Príncipe). In several countries these regulations are being developed (e.g. Cameroon, DR Congo). Cameroon and the DR Congo are currently developing special laws dealing with this. The use of dispersants has to be permitted by the MINEPDED in Cameroon. In Guinea Bissau the future PNIU will deal with this. The policy to use dispersants/dissolvent is under development in Guinea. The Ministry of Environment currently gives the authorization. No policy has been defined yet in Mauritania and the Ministry of Environment currently gives the permission. In Angola dispersants can be used in marine waters with a depth exceeding 20 meters. There is a list of dispersants in the NOSP that can be used temporary, as long as, the National Policy for Dispersants is in preparation. In Nigeria there is a list of approved dispersants and an approval form for use of the dispersants.

Question 13: What security system is in place for pipeline network, depots, terminals and tank farms in your country?

In most countries there are currently no security systems in place to protect oil infrastructure (Liberia, Guinea Equatorial, Sao Tomé & Príncipe, Guinea Bissau, Sierra Leone and Mauritania). Cameroon has permanent control and inspection of oil infrastructure. Oil tanks are required to have concrete walls for protection. The DR Congo has permanent control (guards) and electronic surveillance of oil infrastructure. Pipelines running through marshy areas have special protection. In Angola all equipment and installations must implement a programme including safety valves and an intelligent system of inspection and a fire fighting, as well as a training programme. In Nigeria: perimeter fencing for installations, security guards, and Right-of-way markings.

Question 14: What procedure is used for pipeline integrity checks in your country and how is it done?

In several countries there are no special pipeline integrity checks, either because it is not foreseen yet or because no pipeline infrastructure is present yet (Liberia, Guinea Equatorial,

Guinea Bissau, Sao Tomé & Príncipe, Sierra Leone, Mauritania). In Cameroon there is a permanent inspection and control of pipeline infrastructure. In the DR Congo there are regular patrols of the pipelines and echo sound (electronic) checks. The oil operators in Angola have to implement a integrity and maintenance programme for all operations. In Nigeria: periodic pipeline checks – multifaceted against corrosion and sabotage.

Question 15: What is the process of notification in the event of oil spills in your country?

In most cases this process is not formalized in procedures. Also, major oil spills have not been observed yet in several countries (Sierra Leone, Sao Tomé & Príncipe and Mauritania). In the DR Congo notifications of oil spills have been reported by fishermen to local authorities who warn the national coordinator. The formalization and procedures will be included in the PNIU of Guinea Bissau. In Guinea the notification by ship captains are being reported via the port of Conakry. In Angola the Polluter must notify the authorities within 8 hours if the spill exceeds one barrel (159 liters) and at the same time he must start mobilizing the equipment and the staff if necessary. In Nigeria there is a reporting format to NOSDRA, National Contingency Plan considered activated upon the detection of any spill regardless of its size.

Inventory of Integrated Marine Management Initiatives (part II of the survey)

Question 1: Are there currently Ecosystem Based-Management plans or active projects (national or regional level)?

Most countries (Cameroon, DR Congo, Guinea Bissau, Guinea, Sierra Leone, Sao Tomé & Príncipe, Mauritania and Nigeria) have listed a number of initiatives within the framework of Ecosystem-based Management. Cameroon provided information on the ICZM project of the APN (Autorité Portuaire Nationale), the ICZM project of Kribi-Campo (ENVI-REP Cameroon) and the Regional project on sustainable coastal tourism with 9 West- and East African countries. In Cameroon this project was organized in Kribi. In the DR Congo there is a national action plan for management of the coastal and marine zone. There is also a biodiversity management plan. Guinea Bissau has a mangrove restoration project around the city of Mansoa, several ecosystem conservation projects in protected areas, an ecosystem surveillance project around the village of Formosa. Guinea Bissau also mentions the regional manatee project. Guinea mentions that the "Office Guinéen de la Diversité Biologique et des Aires Protégées" is responsible for these projects at the national level, at the regional level RANPAO is dealing with this. No information is provided on actual projects. In Sao Tomé & Príncipe some EbM related projects exist that focus on fisheries. In Sierra Leone there is currently an artisanal fisheries management project ongoing. Mauritania has a National Action Plan for the Environment (PANE2, 2012-2016) that contains elements and projects on management and protection of the marine and terrestrial environment, including marine protected areas, restoration of the coastal zone and wetlands. At the regional level there are projects in Mauritania in the RANPAO framework (Réseau des Aires marines protégées de l'Afrique de l'Ouest) that involve the 7 countries in the region. Nigeria has the Guinea Current Large Marine Ecosystem (GCLME) Project's National Action Plan (NAP). No information was provided by Liberia and Guinea Equatorial.

Question 2: Which government agency is responsible for these projects and plans?

In Cameroon the MINEPDE (Ministère de l'Environnement, de la Protection de la Nature et du Développement Durable) is responsible. In the DR Congo: the "Direction du Développement Durable", the "Direction Nationale de la Commission du Courant de Guinée" and the "Institut National de la Conservation de la Nature". In Guinea Bissau mangrove restoration projects are the responsibility of the "Cabinet de Planification côtière" (GPC), ecosystem conservation projects in protected areas: "Institut de la Biodiversité et des Aires Protégées" (IBAP), surveil-

lance of ecosystems on the level of communities around Formosa: the IBAP and the NGO "Tiniguena", the Manatee project: "GPC". In Guinea the responsible agencies are the ministry in charge of the Environment and "Eaux et Forêts". In Sao Tomé and Príncipe the fisheries management projects fall under the Fisheries and Environment Directorates, under respectively the ministry of Economy and ministry of Public Works and Natural Resources. The projects in Sierra Leone fall under the Ministry of Fisheries and Marine Resources in cooperation with other Ministries and Agencies/Organizations. The projects in Mauritania fall under the Ministry of environment and the Ministry of fisheries and maritime economy. In Nigeria, the Federal Ministry of Environment is responsible. No information was provided by Liberia and Guinea Equatorial.

Question 2a: Are there any other existing marine or coastal conventional management approaches in place, and which government agency is responsible?

Liberia has projects on protection of coastal Liberia by the Ministry of Land, Mines and Energy. Cameroon has also projects from the MINEPDE. In the DR Congo there are several active NGOs that deal with e.g. marine turtles and Sardinella. The GPC in Guinea Bissau has some experience with coastal zone management. In Guinea the "Code de L'Environnement et ses textes d'application" deal with the approach on marine management. The responsible government agency is the "Centre de Protection du Milieu Marin et des Zones Côtières". MPAs in Mauritania are subject to management based upon shared governance (Parc National Banc d'Arguin, Parc National Diawling). These fall under the Ministry of Environment and Sustainable Development. No information is provided by Guinea Equatorial, Sao Tomé & Príncipe and Sierra Leone.

Question 3a: Are there any Integrated Coastal Zone Management efforts?

No or limited information is provided by Liberia, Guinea Equatorial, DR Congo, Guinea Bissau, Sao Tomé & Príncipe and Sierra Leone. Cameroon listed several projects. In Sierra Leone there is a pilot project on coastal zone management by the government with assistance from Wetlands International and the Regional Program for the conservation of coastal and marine zone. Mauritania has a project on ICZM in the Parc National Banc d'Arguin. Nigeria has a draft Integrated Coastal Area Management (ICAM) Plan that was developed by the Federal Ministry of Environment.

Question 3b: Are there any Marine Spatial Planning processes ongoing?

No or limited information is provided by Liberia, Guinea Equatorial, DR Congo, Sao Tomé & Príncipe and Sierra Leone. Cameroon listed several projects. In Guinea Bissau there are spatial planning processes ongoing within the framework of the Urgency plan of Guinea-Bissau. In addition there are spatial planning projects ongoing related to MPAs and coastal tourism on the Bijagos archipelago. MSP is ongoing in 7 identified regions in Guinea: Iles de Loos, Tristao, Alcatraz, Rio Pomgo, Delta du Konkouré, Delta de la Mélélicoré. Mauritania has a MSP project in the Parc National Banc d'Arguin (Ministry of Environment). In Nigeria, there is Environmental Sensitivity Index (ESI) Mapping project which is partially completed.

Question 3c: Are there any Fisheries Management efforts?

No or limited information is provided by Liberia, Guinea Equatorial, DR Congo, Sao Tomé & Príncipe and Sierra Leone. Cameroon listed several projects. The DR Congo has laws on fisheries management but implementation is weak. Guinea Bissau has several projects (the Cacheu and Rio Grande de Buba rivers). Guinea has a legislation in this regard "Code de la Pêche". There is a regular monitoring (trawling) and protection of habitats and restoration of degraded zones in relation to fisheries. In Sierra Leone there is the West African Regional Fisheries Program implemented by the Ministry of Fisheries and Marine Resources and it contains a component on fisheries management. There is an existing fisheries management regulation currently being implemented in the country. In Mauritania fisheries man-

agement is supported by scientific research. In Nigeria there is the Sea Fisheries Act (recently reviewed) and 3 Fisheries Management Plans namely: TED, BRD and EAF-Nansen.

Question 3d: Have Marine Protected Areas been identified or are there any under development?

No or limited information is provided by Liberia, Guinea Equatorial, DR Congo, Sao Tomé & Príncipe and Sierra Leone. MPAs are under development in Cameroon. In Guinea Bissau there are several listed: the "Parc Naturel de Mangrove de Cacheu", "Parc National de Orango", "Parc National João Vieira Poilão", "Parc naturel des lacs de Cufada". In Guinea seven MPA's have been identified with four of them in an advanced stage and three under development: Iles de Loos, Tristao, Alcatraz, Rio Pomgo, Delta du Konkouré, Delta de la Mélicoré. Four sites have been proposed in Sierra Leone. Mauritania has 2 MPAs: Parc National Banc d'Arguin, Parc National Diawling. In Nigeria, MPAs are under development but not yet designated or developed.

Question 3e: Are there any Watershed Management efforts?

No or limited information is provided by Liberia, Guinea Equatorial, DR Congo, Sao Tomé. Cameroon has listed several areas. In Guinea Bissau there are several projects based upon the dif-

ferent watersheds. In Guinea there are a few projects in the framework of hydroelectric power plants. In Sierra Leone the Bumbuna Watershed Management Authority has been set up in 2008, it incorporates environmental and social needs associated with the operation of the Bumbuna hydroelectric dam, including the physical protection and sustainability of the Bumbuna reservoir. In Mauritania this will be foreseen by the PANE2. Nigeria mentions that these exist but no further information is provided.

Question 3f: Are there any governance mechanisms in place e.g. a mechanism to involve stakeholders in planning and management processes?

No or limited information is provided by Liberia, Guinea Equatorial, DR Congo, Sao Tomé. In Cameroon stakeholders are involved in all of the listed projects. In Guinea Bissau stakeholders are involved in all MPAs. In Guinea Planning stakeholders are included in biodiversity conservation projects, habitat restoration projects and coastal zone erosion projects. In Sierra Leone co-management is a component of the overall project. In Mauritania this is foreseen in the legislation. In Nigeria stakeholders are consulted regularly especially through the GCLME Inter-Ministerial Committee (IMC).

Question 4: What are the key concerns/pressures and what would be the target geographical area?

	Angola	Cameroon	DR Congo	Guinea	Guinea Bissau	Guinea Equatorial	Liberia	Mauritania	Nigeria	Sao Tomé & Príncipe	Sierra Leone
Improved governance/strengthening governing											
Sustainable management (better balanced)											
Land conflicts in the coastal zone											
Lack of protection of MPAs											
Unplanned and illegal urban development											
Coastal zone erosion											
Soil degradation (salinization, inundation)											
Mangrove destruction											
Marine habitat degradation by offshore mining and oil and gas industry											
Fisheries conflicts (industrial versus traditional)											
Illegal fisheries											
Destructive fishing methods											
Overharvesting of fish stocks											
Oil pollution											
Pollution in general											
Pollution of the marine environment by land-based sources (including industries)											

Question 5: What are the needs/challenges to move towards an ecosystem approach to management?

Identification of needs to implement EbM											
Financial means											
Equipment for activities (monitoring, pollution control etc.)											
Capacity of the government for sustainable management (creating coherent mechanisms)											
Lack of legislation/marine policy framework											
Lack of awareness on integrated marine management											
Co-management, involvement of stakeholders											
Enforcement of marine environmental legislation											
Monitoring and surveillance											
Implementation of sustainable management practices											
Control on marine pollution and enforcement											
Coastal erosion control measures											
Handling unplanned urban development along the coast											
Climate change											
Biodiversity loss											
Habitat restoration											

■ Issue mentioned by the respondent
 ■ No information received



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