

Marine Spatial Planning Workshop Held at Kenya marine and fisheries research Institute (KMFRI)

Mombasa, Kenya

10-14 September 2018



Figure show the Participants during the Marine Spatial Planning Workshop at Kenya Marine and Fisheries Research Institute Mombasa, Kenya

The aim of the workshop was to enhance capacity in science-based management tools such as Integrated Coastal Zone Management, Marine Spatial Planning and the Large Marine Ecosystem Approach for better response to challenges in coastal and marine environment.

Workshop Trainers

- Joel Kamdoum (Marine Spatial Planning)
- Pascal Thoya (Marine Spatial Planning)
- Mika Odido (Governance)
- Jared Bosire (Governance)
- Harrison Onganda (Data and GIS)
- Zach Maritim (Marine Spatial Planning and Data Management)

DAY 1

Session 1

Introduction and Opening Remarks

The workshop was called to order at 0900 hours by Harrison Ong'anda. He welcomed the participants to Kenya Marine and Fisheries Research Institute (KMFRI) then led the introductions. He then welcomed Mika Odida who gave remarks from the Intergovernmental Oceanographic Commission of UNESCO (IOC-UNESCO) highlighting the importance of marine spatial planning as a tool for management of coastal resources towards achieving blue/ocean economy initiatives. Mika Odida recognised the support from Western Indian Ocean Marine Science Association (WIOMSA) and World Wildlife Fund (WWF) towards the MSP Workshop. Jared Bosire was then invited to give remarks from United Nations Environment Programme – Nairobi Convention. He welcomed the participants to KMFRI and Kenya. He emphasised that most of the

economies in the region are depended on natural resources hence the need for spatial planning to realize the balance between economic development and preservation of marine resources. Dr James Mwaluma was then invited to read the official opening speech from KMFRI Director, Dr James Njiru. The speech highlighted MSP as a tool for sustainable economic development.

Institutional Presentations

This session was opened by Harrison who gave a presentation about KMFRI in which he emphasized on the institutions mandate and specific roles which are geared towards sustainable exploitation, management and conservation of Kenya's fisheries and other aquatic resources. The presentation highlighted KMFRI's focus areas which include Research and innovation, Transfer of technology and community outreach, Resource mobilization and institutional capacity building and Partnerships.

The presentation on the Intergovernmental Oceanographic Commission of UNESCO: The Ocean Sciences arm of UN (IOC – UNESCO) was delivered by Mika Odido. The presentation emphasised on IOC – UNESCO's role in promoting international cooperation and coordination programmes in research and capacity building on ocean and coastal resources and the application of that knowledge in the improvement of management, sustainable development, the protection of the marine environment and the support of ecosystem-based policy development. The presentation highlighted the services provided by IOC – UNESCO such as management of global ocean observing system and provision of information on global coastal hazards, sea level rise and climate change. The presentation emphasised on the role of International Oceanographic Data and Information Exchange (IODE) in facilitating the exchange of oceanographic data and information between participating member states, which is crucial in guiding ocean planning, an important process in blue economy development and attainment of Sustainable Development Goals (SDGs) especially SDG14 on life below water.

The presentation on United Nations Environment Programme – Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean was delivered by Jared Bosire. He highlighted that the Nairobi Convention is a partnership between governments, civil society and the private sector, working towards a prosperous Western Indian Ocean Region with healthy rivers, coasts and oceans. He emphasized on the need for protection and management of the WIO region since 65 million people live within 10 km of the coastal strip, the region has high biodiversity hosting 83% of known fish families with 13% of marine species being endemic to the region. The region is also important economically with an estimated Gross Marine Product of about \$ 20 billion/year and it's also an emerging oil and gas frontier. He then highlighted the major threats to coastal ecosystems including illegal fishing, pollution from land-based sources, ocean acidification and inadequate law enforcement. The area has numerous development opportunities such as oil and gas, aquaculture, wind energy, deep sea mining, luxury tourism and ocean thermal conversion. He finished by highlighting the WIOSAP and SAPPIRE projects which are being implemented by Nairobi Convention and through which capacity development on MSP is be supported.

Session 2

Concepts, policies, international experiences and best practices on MSP in Africa

The presentation *Blue Economy and Marine Spatial Planning in the Western Indian Ocean* by Jared Bosire highlighted the increasing development corridors and economic opportunities in the African Continent due to foreign direct investments and remittance, exploitation of industrial raw materials and the realization of coastal resources. The presentation highlighted Nairobi Convention COP decisions e.g. decision CP8/10, CP8/10 and CP9/10 which support development of capacity-building programmes on marine spatial planning as a tool for sustainable economic growth. The presentation expounded on key policies guiding blue economy such as Africa's Blue Economy: A policy handbook, 2050 Africa's

Integrated Maritime Strategy and Building the Blue Economy in the WIO Region among others. The presentation highlighted regional case studies in which MSP has been applied extensively i.e. Operation PHAKISA in South Africa and Seychelles MSP Initiative.

The presentation *National and sub-national spatial planning: Kenya Case Study* was prepared by Zachary Maritim and delivered by Nathan Mutunga. The presentation discussed WWF support to spatial and land use planning in Kenya through which the National Land Use Policy, National Spatial Plan and Physical Planning handbook have been developed. The presentation outlined WWF's achievements in Kenya such as development of the Lamu County Spatial Plan and Critical Ecologically Significant Areas (CESA) maps for Lamu, Kwale, Bomet and Narok counties. The presentation identified political interests, lack of ownership, inadequate funds and lack of capacity to undertake spatial plans as some of the challenges facing spatial planning in Kenya.

Session 3

The importance of data, information and knowledge to lead MSP – Coastal and Marine Atlases

The presentation on *Africa Coastal and Marine Atlas: Current Status and further development* was delivered by Harrison Ong'anda. The presentation gave an overview of environmental data from national surveys, specialized agencies (satellite data) and in-situ observations which can be used by countries to aid in making informed decisions. The available data include hydrographs of major rivers, settlements, fish data, climatic data, coast sensitivity, land use and soil information among others. The presentation discussed the Nairobi Convention Clearinghouse mechanism established through COP decision CP4/8 to develop human resource capacities on information management, advocate for data standards to assist in regional assessments and dissemination of scientific, technical, environmental, legal and policy information.

Session 4

Data Portal related to MSP

The presentation on *Marine Spatial Data Infrastructure (MSDI)* was presented by Joel Kamdoum. The presentation outlined the features of MSDI including metadata, network services, interoperability of spatial datasets, data monitoring, reporting, coordination and service sharing. The presentation described the Marine Cadastre: a system to enable the boundaries of maritime rights and interests to be recorded, spatially managed and physically defined in relationship to the boundaries of their neighboring or underlying rights and interests. The marine cadaster allows users to visually analyze and explore geospatial data for marine spatial planning activities thus providing direct access to authoritative marine cadastral data from federal and state sources. The presentation emphasized on the importance of data, data descriptors (metadata) and information on marine spatial plan development.

The presentation *SIGHT – AFRICA: Integrating Spatial Data to Guide Spatial Planning, Policy and Investment* was delivered by Zachary Maritim. The presentation highlighted the key drivers of economic growth in Africa such as investments, governance and natural resource exploitation. The presentation discussed the WWF - SIGHT portal which provides an up to date and reliable means of visually comparing development projects and activities against key social and environmental metrics almost anywhere on Earth. The portal can be utilised by governments, companies, investors and civil society to understand the potential environmental and social impacts of human development. Its goal is to protect the natural world by managing risk and guiding sustainable land use planning, policy and investment.

DAY 2

Session 5

Stakeholder involvement in MSP process: Participation, collaboration, cooperation and coordination

The presentation on *An Approach to Marine Spatial Planning Steps* was delivered by Joel Kamdoum. The presentation discussed the step-by-step process of developing a marine spatial plan as described in *Marine Spatial Planning: A Step-by-Step Approach toward Ecosystem-based Management* developed by IOC-UNESCO. The presentation emphasised that an MSP should be based on strong socio-economic and/or environmental factors which have been proposed by relevant stakeholders. The process of MSP development should be guided by a planning authority which is independent and has legal authority in the area. The process will also involve implementing authorities representing different sectors working together to achieve ecosystem-based management of the ocean. The presentation highlighted the need for clear delineation of boundaries for the different activities. The marine spatial plan should have clear goals and objectives which are Specific, Measurable, Attainable, Realistic and Time bound. The plan should also provide a framework for achieving the goals. The process of developing a marine spatial plan should involve all stakeholders who will be affected, involved or are interested in the marine space. Potential stakeholders can be identified based on proximity, economy use/interest, social values or through brainstorming. Key stakeholders are then identified through an identification matrix according to level of influence, importance and extent of involvement/participation in the development process. Stakeholder involvement defines who, when and how they will be engaged to ensures the process is socio-economically, environmentally and politically acceptable.

Session 6

Sectoral needs in MSP

The presentation on *Identifying existing/Potential uses* was prepared by Joel Kamdoum and delivered by Pascal Thoya. The presentation discussed interaction of marine activities such as fishery and aquaculture, tourism, oil and gas and research in the marine space. Marine spatial planning is key in allocating favorable space to all the activities to ensure maximum field while reducing user conflict among different stakeholders.

Session 7

Discussions on knowledge of existing condition is support of MSP

The presentation section on *Analyzing existing conditions/Spatial Scenarios* was delivered by Joel Kamdoum. The section focused on analysing existing conditions such as biological and ecological significant areas, possible conflicts and compatibilities of human activities in order to come up with evidence-based scenario creation mechanism. The process provides a framework to methodically and objectively describe those areas of the ocean that are crucial to the healthy functioning of the global marine ecosystem. The presentation expounded on the cumulative impact mapping which is the impact of different stressors on a marine resource/area.

Case Study: Developing a Marine A Spatial Plan for Shimoni – Vanga Area

Under this section the participants were provided with printed maps of Shimoni – Vanga Area. Using the maps, they identified potential stakeholders in the area then develop a stakeholder matrix for area to show the key stakeholders. The exercise proved that stakeholder engagement in the MSP process is not rigid, but stakeholders can be moved in the matrix as more information becomes available.

They also identified key coastal and marine ecosystems of the area. Using the skills learned, they developed a spatial plan for the area including sites for fishing port and shipping lanes, marine protected area, fish cage culture and oil exploration

Session 8

Regional Transboundary/Transborder MSP: Challenges and Opportunities

Under this section, Mika Odido guided the participants in discussing major activities in LMEs in Africa. Key activities raised include oil and gas exploration, marine water desalinization, port development and expansion, development of resorts, phosphate and diamond mining. The discussion highlighted issues on Transboundary projects including mistrust between countries, language barrier, political will, policy, cultural and financial differences, lack of technical expertise and difference in government priorities.

Jared Bosire delivered a presentation on the Nairobi Convention Project at the Northern Mozambique Channel a key biodiversity hotspot. Development activities in the area call for marine spatial planning for the area to ensure conservation and management of resources and biodiversity in the area. The presentation the Transboundary Conservation Area Project between Kenya and Tanzania which will be executed in an area rich in fisheries, mangroves, coral reef and sea transport amidst marine protected area hence requiring a spatial plan to be conducted for the area. The presentation highlighted the ongoing talk for management of Areas Beyond National Jurisdiction.

DAY 3

Session 9 - 12

Field Excursion

The field excursions exposed the participants to life scenarios upon which they developed spatial plans. They visited Ken Salt Farm in Malindi, the Malindi Jetty, Malindi Marine Park and Crab Shack Dabaso in Watamu. The participants were divided into four groups and for all the sites they were required to identify the key activities and stakeholders then develop a spatial plan for each.

DAY 4

Session 13

Field work report presentation

The group presentations outlined the activities for sites including salt production, fishing, mangrove conservation, trawling and tourism. The major marine issues in the area include clearing of mangrove to create salt farm, sedimentation, among other. The key stakeholders identified include Beach Management Unit (BMU), local conservation groups, community leaders, Research Institutions (e.g. KMFRI), Kenya Fisheries Service (KFS), Investors in the salt farm, County Government and National Environmental Management Authority (NEMA). The presentations described how MSP can be used to integrate the needs of the user groups to minimise conflict while addressing the marine issues.

Session 14

MSP pre-planning Forming team and developing work plan defining principles, goals and objectives specifying boundaries and time frames

The presentation on *An Approach to Marine Spatial Planning Steps: Deciding how to allocate uses/activity* was delivered by Joel Kamdoum. The presentation discussed the need for identification of conflicts and compatibilities related to the multiple uses of the marine environment then using decision support tools such as MARXAN to visualize spatial conflicts and compatibilities then propose for space allocation for current and future uses and management scenarios.

Session 15

Defining future conditions

The presentation on *An Approach to Marine Spatial Planning Steps: Presenting Spatial Plan proposal and Proposing monitoring process* was delivered by Joel Kamdoum. The presentation emphasized that an MSP should identify when, where, and how goals and objectives will be met including the funding mechanism. The spatial management plan should guide the ecological, social, and economic development of the marine area. The plan should also include a monitoring framework to provide managers and stakeholders with indications of the extent of progress toward the achievement of management goals and objectives.

Day 5

Session 16 – 17

Presentation Country specific MSP Elements

Working according to the Large Marine Ecosystems, the participants identified a significant area, described the current and possible future uses of the area, outlined the key coastal and marine ecosystems in the area then developed a stakeholder matrix. In their presentation they discussed the application of MSP to address various challenges within the area of interest. They also highlighted policies and laws which can support MSP development in the area.

Session 18

Local capacity development needs and what country representatives could offer to collaborate in a potential project self-funded

The presentation on *Understanding, selecting & designing Stakeholder Pathways THEN effecting Capacity Building* was delivered by Zac Maritim. The presentation focused on effective capacity building for stakeholders in marine spatial planning. Capacity building should be an interactive process focused on active learning, coaching, mentoring, shadowing and secondments to empower relationships.

Session 19

Course wrap up

Jared Bosire highlighted the difference between Environmental Impact Assessment (EIA), which is done based on a specific project and Strategic Environmental Assessment (SEA) which done at macro level before projects are commissioned.

Each participant was issued a certificate of participation in the workshop. During the closing remarks, Dr. Mwaluma thanked the participants, trainers and sponsors for the commendable job. He urged the participants to utilize the skills acquired back home to guide the development of environmentally sound policies and projects.

Annex

1. [Marine Spatial Planning Workshop Course Agenda](#)
2. List of Participants

OTGA/KMFRI /UNEP Training Course: Marine Spatial Planning
Dates: 10-09- 2018 to 14-09-2018

Mombasa, Kenya	
Name of Participant	Affiliation
Mr. Joel KAMDOUM NGUEUKO	Research Scientist (Marine Spatial Planning) Research and Development CREOCEAN RUE CHARLES TELLIER – Rochelle France
Mika ODIDO	UNESCO/IOC Sub Commission for Africa and the Adjacent Island States, UNESCO Nairobi Office
Pascal THOYA	Kenya Marine and Fisheries Research Institute
Jared BOSIRE	UNEP – Nairobi Convention
Zachary MARITIM	WWF - Kenya
Nathan MUTUNGA	WWF - Kenya
Bonface Mutisya	UNEP – Nairobi Convention
Ms. Oluwakemi ADEJUMOBI	Nigerian Institute for Oceanography and Marine Research Victoria Island
Ms Mercy AMAI	Environment Officer National Environment Management Authority Nairobi, Kenya
Mr. Sekou Tidiane BANGOURA	Department of Oceanography Centre de Recherche Scientifique de Conakry Rogbanè
Dr. Sandrine DJAKOURÉ	Environment and Climate Université Félix Houphouët Boigny - Laboratoire de Physique de l'Atmosphère et de Mécanique des Fluides. Abidjan, Côte d'Ivoire
Mahmoud EL-MEZAYEN	Aquaculture National Institute of Oceanography and Fisheries, Cairo Egypt
Mr Mattheus HAMBABI	Department of Water Affairs and Forestry Ministry of Agriculture, Water and Forestry, Namibia
Mr Abdallah HATIMY	State Department for Shipping & Maritime Affairs. Nairobi, Kenya
Ms. Grace KAKAMA	Fisheries Officer, Fisheries Department Kinondoni Municipal Council, Dar Es Salaam, Tanzania
Olayemi KASSIM	Nigerian Institute for Oceanography & Marine Research (NIOMR) Lagos Nigeria
Megan KINARA	Information Communication Technology Kenya Marine and Fisheries Research Institute, Headquarters & Mombasa Station
Ms. Getrude LESHAMTA	Scientist, Kenya Meteorological Department Nairobi Kenya
Mrs Aciano LIPANGUE	Postgraduate Student, Geomatics Division - UCT University of Cape Town, South Africa
Ms. Vilma MACHAVA	Lecturer, Departamento de Ciências Biológicas Universidade Eduardo Mondlane Maputo Mozambique
Ms. Amina MAKORI	Assistant Research Officer-Marine Geologist Oceanography and Hydrography Kenya Marine and Fisheries Research Institute
Mr. Hakimu MATOLA	Research Officer, Statistics and Research Deep Sea Fishing Authority Zanzibar, United Republic of Tanzania
Mr. Ariel MEDRID	Information Communication and Technologies United Nations Environment Programme (Abidjan Convention Secretariate) Abidjan Côte d'Ivoire
Mr James MMUOMAIHE	Marine Geology & Geophysics Nigerian Institute for Oceanography and Marine Research, Nigeria
Ms Obakeng MOLELU	Natural Resources and Environment: Coastal Group

	Council for Scientific and Industrial Research, Durban, South Africa
Mr Abdulaziz MUSSA	Fisheries and Marine conservation officer Department of Fisheries Development, Zanzibar United Republic of Tanzania
Ms. Damaris MUTIA	Oceanography and Hydrography Kenya Marine and Fisheries Research Institute, Mombasa Kenya
Benjamin N'GUESSAN	Centre National de Recherches Océanologiques Abidjan, Côte d'Ivoire
Ms. Ester NANGOLO	Fisheries Biologist Fisheries Biologist Division Namibia
Ms Morine NGARARI	Aquaculture Kenya Marine and Fisheries Research Institute, Mombasa, Kenya
Mr. Mussa NGOSHA	Tanzania Fisheries Research Institute (TAFIRI) Dar es Salaam, United Republic of Tanzania
Ms. Jane NYAMORA	Kenya Marine and Fisheries Research Institute. Mombasa, Kenya
Dr. Judith OKELLO	Kenya Marine and Fisheries Research Institute, Headquarters & Mombasa, Kenya
Dr Augustina OKEREKE	Nigerian Insitute for Oceanography and Marine Research Lagos State Nigeria
Dr. Naglaa SOLIMAN	Water Pollution and Marine Environment Laboratory Alexandria University, Institute of Graduate Studies and Research Egypt
Ms. Estee VERMEULEN	Nelson Mandela Metropolitan University, Botany Department Summerstrand Campus Port Elizabeth Eastern Cape, South Africa
Ms Emily WAFULA	Fisheries Research Kenya Marine and Fisheries Research Institute, Kegati Station, Kenya
Ms. Hawa YAQUB	Fisheries Scientific Survey Division, Ghana Oceanographic Data Centre Accra, Ghana
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Sofia Chambe	Mozambique